ALASKA DEPARTMENT OF FISH AND GAME

DIVISION OF COMMERCIAL FISHERIES

ANNUAL MANAGEMENT REPORT
UPPER COOK INLET

1979

Submitted By

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INTRODUCTION

The Upper Cook Inlet management area consists of that portion of Cook Inlet north of the latitude of Anchor Point and is divided into the Central and Northern Districts (Figure 1). The Central District is approximately 75 mi long, averages 32 mi in width, and is further subdivided into six subdistricts. The Northern District is 50 mi long, averages 20 mi in width and is divided into two subdistricts. At present, all five species of Pacific salmon (Oncorhyncus sp.), razor clams (Siliqua patula), and Pacific herring (Clupea harengus pallasi) are subject to commercial harvest in Upper Cook Inlet.

Salmon

Since the inception of a commercial fishery in 1882, many gear types, including fish traps, gill nets, and seines have been employed with varying degrees of success to harvest salmon in Upper Cook Inlet. Currently , set (fixed) gill nets are the only gear permitted in the Northern District, while both set and drift gill nets are used in the Central District. The use of seine gear is restricted to the Chinitna Bay Subdistrict where they are employed only sporadically. Drift gill nets have accounted for 60% of the average annual salmon harvest since 1966 with set gill nets harvesting virtually all of the remainder (Appendix Tables 1-6).

Commercial salmon harvest statistics specific to gear type and area are available only back to 1966 (Appendix Table 7). Run-timing and migration routes utilized by all species overlap to such a degree that the commercial fishery is largely mixed-stock and mixed-species in nature. Typically, the Upper Cook Inlet harvest represents approximately 5% of the statewide catch.

In terms of their economic value, sockeye salmon (O. nerka) are by far the most important component of the catch followed in order by chum (O. keta), coho (O. kisutch), pink (O. gorbuscha) and chinook salmon (O. tshawytscha) (Appendix Table 8).

Herring

Commercial herring fishing began in Upper Cook Inlet in 1973 with a modest harvest of bait-quality fish along the east side of the Central District and has expanded in recent years to include small-scale sac roe fisheries in Chinitna and Tuxedni Bays (Appendix Table 9). The total herring harvest has averaged less than 200 tons having an exvessel value below $100,000, one of the smallest herring fisheries in the state.

Because the glacial waters of Upper Cook Inlet preclude the use of aerial surveys to estimate biomass of herring stocks, the management approach utilized has necessarily departed from the standard techniques of the more traditional herring fisheries. Present management policy allows for modest increases in harvest levels on a yearly basis, monitoring catches for shifts in age

composition, and establishing harvest levels that appear to be sustainable. Gill nets are the only legal gear for herring in Upper Cook Inlet with set gill nets being used almost exclusively. Harvests are generally concentrated in the Clam Gulch area (bait herring) and in the Snug Harbor and Magnetic Island areas of Tuxedni Bay and near Clam Cove and Camp Point in Chinitna Bay (roe herring).

Razor Clams

The commercial harvest of razor clams from Upper Cook Inlet beaches dates back to 1919. Harvest levels have fluctuated from no fishery for as many as eight consecutive years to production in excess of half a million pounds (live weight) in 1922 (Appendix Table 10). The sporadic nature of the fishery has been a function of limited market opportunities rather than limited availability of the resource.

Razor clams are present in many areas of Cook Inlet with particularly dense concentrations occurring near Polly Creek on the western shore and from Clam Gulch to Ninilchik on the eastern shore. The eastern shoreline has been set aside soley for sport harvest since 1959 and all commercial harvests since that time have come from the west shore, principally from the Polly Creek area. A large portion of the the Polly Creek Beach is approved for the harvest of clams for the human food market. Bait clams may be taken only outside of this approved area. No size restrictions or overall harvest limits are in place for any area. Virtually all of the commercial harvest has come by hand-digging. Current regulations allow the use of mechanical harvesters (dredges) south of Spring Point or within a one mile section of the Polly Creek beach. Numerous attempts to develop feasible dredging operations have been largely unsuccessful due to excessive breakage or limited resources in the area open to this gear.

1979 COMMERCIAL SALMON FISHERY

The 1979 season resulted in a below average commercial salmon harvest. This was due primarily to a below average catch of sockeye salmon. Tables 3-12 show the 1979 season's catch by species and by fishing period for Upper Cook Inlet.

Despite the weak run of sockeye salmon to Upper Cook Inlet, escapement goals were essentially obtained in each of the four major river systems (Appendix Table 11). Therefore, from a management viewpoint, the 1979 season was a success.

Three new programs were operated this year to provide additional in-season assessment of the sockeye salmon run. The three new programs were: (1) stock separation analysis; (2) off-shore test fishing; and (3) in-district test fishing. The information obtained from these programs was combined with the escapement data from the four major river systems. This provided a

reasonably accurate model of the sockeye salmon run which enabled the staff to make logical management decisions as the season progressed. As a result of the run modeling and other circumstances, the base fishing time of two 12-hour periods per week and/or the normal fishing areas were altered by emergency order on eight occasions this year. Table 13 gives a brief description of each emergency order the the reasoning for its issuance. Table 14 describes each fishing period by gear type. Stock separation studies began in Upper Cook Inlet during the 1976 season. However, 1979 was the first year that stock separation analysis was available in a timely enough fashion to be utilized for management purposes in season. This year, the in-season stock separation analysis was limited to sockeye salmon. Briefly, the various stocks of sockeye salmon can be separated on the basis of scale pattern characteristics. This is accomplished by digitizing data from the fresh water growth portion of a scale into a computer for a discriminate function analysis: a process which classifies the scale to its river system of origin.

The Upper Cook Inlet off-shore test fishing program was initiated in 1976 and was patterned after the off-shore test fishing project off Port Moller in Bristol Bay. Due to a number of factors, the off-shore test fishing program in Upper Cook Inlet did not work well until the 1979 season. Consequently, the information generated from this program was viewed cautiously. This project consisted of a 48-foot vessel fishing 200 fathoms of drift gillnet at eleven predetermined stations between Anchor Point and Red River. These stations were fished daily from 25 June through 21 July. The concept behind off-shore test fishing is to intercept the returning salmon prior to their entering the fishing districts to determine the species composition, run timing, and run magnitude.

The use of in-district test fishing boats in the Central District was the result of a concern on the Department's part regarding the abundance of sockeye salmon in the Central District. Low numbers of sockeye salmon in the Kenai River on 11 July prompted the first in-district test fishing on 12 July. At that time, six drift gillnet boats were contracted to conduct the in-district test fishing on those days when the staff felt it necessary.

The project was designed such that the six test fishing boats worked in pairs, with each of the three pairs of boats fishing a different portion of the Central District but concentrating on the east, mid, and west rips. The three areas within the district were:

1) Above Kalgin Island and from the west side of the west rip to the eastside beach;
2) East of Kalgin Island to the eastside beach; and
3) Below Kalgin Island and east of a line from the bottom of the island to the Kalgin Island buoy.

Each skipper was instructed to fish in locations where he would

expect to catch fish if fish were present. Each test fishing boat was supplied with a grid map of the Central District and a State employee who collected scale samples from the catch and transferred the catch data, via CB radio, to the Soldotna office.

The events around 11-13 July provide a good example of how the data generated from each of these three programs was combined to provide the department with a relatively comprehensive assessment of the sockeye salmon stocks in Upper Cook Inlet at that time. The data from the off-shore test fishing boat indicated that the peak of the sockeye salmon run to Upper Cook Inlet had already passed the lower boundary where they were fishing and that the run would soon be over. This knowledge, coupled with a very low escapement into the Kenai River, caused the Department to be quite concerned regarding the correct actions to take to assure that the Kenai River escapement goal would be attained and that any sockeye salmon surplus to the escapement goal would be harvested commercially. The data gathered on 12 July by the six in-district test fishing boats suggested that the abundance of sockeye salmon in the Central District was marginal if escapement goals were to be reached and still have a commercial fishing period on 13 July. As a result of the information gathered this point, a commercial fishing period was announced for Friday, 13 July, but the drift fleet (the most efficient gear type) was limited to fishing for only six hours.

The stock separation analysis on the sockeye salmon scales collected from the in-district test fishing operation on 12 July was completed by 9:00 A.M. on Friday, 13 July. This new information further refined the status of the Central District's sockeye salmon stocks. Scale pattern analysis indicated that only 53% (approximately) of the sockeye salmon in the Central District were bound for the Kenai River. This was a lower percentage than expected. Consequently, the standard fishing period scheduled for 16 July was canceled as it appeared that the remaining Kenai River sockeye salmon would be needed in the Kenai River for escapement.

Further in-district test fishing was conducted on 17 July and 19 July to determine the status of the sockeye salmon run. During this time frame, large numbers of sockeye salmon were entering the Kenai River. The test fishing boats on 19 July showed that most of the sockeye salmon in the Central District has already entered the rivers. All of Upper Cook Inlet was opened to commercial fishing on 20 July and normal fishing continued through 6 August.

The Alaska Board of Fisheries Kenai-Russian River Sockeye Salmon Management Plan establishes that if the estimated total Kenai River sockeye salmon escapement will be less than 300,000, then the mainstem Kenai River will be closed to sport fishing for sockeye salmon. On 15 July, the Commercial Fisheries staff at Soldotna estimated that the total Kenai River sockeye salmon escapement would fail to reach 300,000. The Sport Fish staff at Soldotna then issued an Emergency Order closing both the mainstem

Kenai River and the Russian River to sport fishing for sockeye salmon, effective 12:01 A.M., 19 July. This sport fishery was reopened by emergency order at 12:00 noon on 22 July, after being closed for three and one half days, as the result of an up-dated estimate by the Commercial Fisheries staff that the final Kenai River sockeye salmon escapement would exceed 300,000.

The Russian River sockeye salmon run averages approximately 20% of the total Kenai River sockeye run. In 1979 a larger than average portion (36%) of the total run went to the Russian River system. Therefore, the Sport Fish staff at Soldotna issued another emergency order opening additional area on the Russian River to sport fishing in an effort to maximize the sport harvest.

It should be noted that in each of these two situations the Commercial Fisheries staff at Soldotna was severely criticized by members of the public. During the first situation, the staff was criticized by some sport fishermen for not having more sockeye salmon in the Kenai River and by some commercial fishermen for not closing the Kenai River to sport fishing sooner. When 36% of the Kenai escapement went to the Russian River, many commercial fishermen became extremely upset with the staff and claimed that the fishery was being managed for the benefit of the sports fishermen. The public's reaction to these two situations exemplifies the competition between these two user groups for the fishery resource in the Upper Cook Inlet area.

The number of units of gear fishing is usually distributed around the peak of the sockeye salmon run in a manner similar to a bell-shaped curve. This is particularly true of the drift fleet. However, in 1979 the number of boats fishing remained at a high number (500) following the end of the sockeye salmon run.

As the chum salmon run progressed, it became apparent that the chum salmon run was weak and being over-harvested by a much larger than normal drift fleet. Initially, this problem was masked because the total chum salmon catch remained high from period to period. But when viewed from a CPUE aspect, the problem became apparent. Therefore, it became necessary to halt all commercial fishing by the drift fleet in order to allow the remaining chum salmon an opportunity to enter the rivers and boost a poor chum salmon escapement. (The drift fleet accounts for 88% of the chum salmon harvest). The drift fleet was not given a fishing period from 7 August until 17 August. This extended closure resulted in a doubling of the Susitna River chum salmon escapement (the only system in which the department enumerates chum salmon with sonar).

The number of limited entry permits issued for salmon set gillnets and salmon drift gillnets in Cook Inlet this year exceeded the Commercial Fisheries Entry Commission's 1974 ceiling of 545 drift gillnet permits and 670 set gillnet permits. This year there were 549 permanent and 45 interim-use salmon drift

gillnet permits and 722 permanent and 5 interim-use salmon set gillnet permits issued for Cook Inlet (Appendix Table 12).

King Salmon

The 1979 commercial catch of king salmon was 13,738. This was 36% above the recent historical average (1973-1978) of 9,990. The Central District accounted for 12,024 of these fish, or 88%. The Northern District's catch was 1,714 king salmon, or 12% of the total Upper Cook Inlet king salmon harvest.

At the Board of Fisheries meeting in Juneau in December 1978, the Board passed a regulation which changed the date of the first commercial salmon fishing period in the Northern District from the first Monday or Friday after 1 July to 25 June for the 1979 season. It was stated that the Board would review the number of additional king salmon harvested as a result of the earlier starting date. The preliminary catch data for the 1979 season indicates that 1,219 king salmon were caught in the Northern District during the two fishing periods prior to 1 July. The two fishing periods were on 25 and 29 June and yielded a catch of 980 and 239 king salmon, respectively. Thus, 71% of the Northern District's total king salmon catch came from the two fishing periods before 1 July.

Sockeye Salmon

The 1979 commercial catch of 924,415 sockeye salmon was 18% below the 20-year average (1959-1978) of 1,133,258. The Central District accounted for 811,966 sockeye salmon, or 88% of this year's sockeye salmon catch. The Northern District's catch of 112,449 sockeye salmon represented 12% of the total Upper Cook Inlet sockeye salmon catch this year.

The drift fleet harvested the majority of the Central District's sockeye salmon again this year, accounting for 56% of them. This is slightly below the 1966-1967 average of 57%.

1979 was a good year for sockeye salmon escapements. The Kasilof River received 135,000 sockeye salmon. This was within the upper end of the range of our desired escapement goal (75,000-150,000). Additionally, these fish were fairly evenly distributed among the various spawning streams around Tustumena Lake.

The Kenai River late run of sockeye were enumerated from 22 June through 14 August. A preliminary count of 322,000 sockeye salmon passed the sonar counters during this time period. The Sport Fish Division has estimated the sport catch of late-run sockeye salmon at 32,830. This leaves approximately 289,000 late-run sockeye salmon spawners in the Kenai River drainage. This is slightly (4%) below the minimum escapement goal of 300,000 sockeye salmon spawners.

This was the first year that a complete enumeration of sockeye salmon entering Crescent Lake was made. Sockeye salmon began

entering the lake in appreciable numbers of 1 July. By 12 August an estimated 90,000 sockeye salmon had entered the lake. This was above the pre-season expected run of 30,000-50,000 spawners.

A preliminary apportioned count of 185,000 sockeye salmon escaped up the Susitna River in 1979. This was 7.5% below the optimum escapement goal of 200,000 sockeye salmon.

Pink Salmon

The 1979 pink salmon catch of 72,982 was only 51% of the historical odd year average (1959-1978) of 141,855 pink salmon. The Central District accounted for 46,650 of these, or 64%, while 26,332, or 36%, were caught in the Northern District.

It should be noted that this average figure of 141,855 is biased due to phenomenally large returns of pink salmon in 1973, 1975, and 1977. The reasons for these three odd years' large returns are unknown. The "poor" returns of pink salmon in 1979 may simply be a reversal of trends, e.g., going from the three recent large odd year runs to the earlier small odd year returns.

Chum Salmon

The 1979 chum salmon catch of 650,357 was 6% above the 20-year average (1959-1978) of 616,533. The Central District accounted for 641,087, or 99%, of this year's Upper Cook Inlet's chum salmon harvest. The Northern District fishermen caught 9,270 chum salmon, or 1%, of this year's chum salmon catch.

This remarkable catch distribution between the Northern and Central Districts was the result of an unusually large number of drift boats fishing late into the season in the Central District. Historically, the drift fleet has harvested an average of 88% of the chum salmon catch. This year the drift fleet caught 94% of the season's chum salmon catch.

Aerial surveys of the clearwater streams on the west side of the Central District showed low numbers of chum salmon. The Chinitna Bay chum salmon run was weak this year and a poor escapement was attained. Similarly, the Susitna River chum salmon escapement was only 63,000, or 32%, of the desired goal of 200,000. Most of the chum salmon returning to Upper Cook Inlet are 4-year old fish. Therefore, a weak chum salmon run can be expected in 1983.

Coho Salmon

This year's commercial catch of 265,166 coho salmon was 22% above the 20-year average (1959-1978) of 216,910. The Central District's harvest of 212,531 coho salmon was 81% of the total Upper Cook Inlet coho harvest. The remaining 52,635 coho salmon, 19% of the coho salmon catch, were caught in the Northern District.

The Susitna River coho salmon escapement was 52,000 this season. That represents 52% of the desired escapement goal of 100,000 coho salmon.

At the Board of Fisheries meeting in June in December 1978, a regulation was adopted which:

1) Closed the Northern District to commercial fishing after 15 August;
2) Closed the Upper Subdistrict of the Central District to commercial fishing with set gillnets after 15 August; and
3) Restricted the drift fleet from fishing within the five miles of the east shore of the Upper and Lower Subdistricts of the Central District after 15 August.

This regulation eliminated any commercial fishery on the Kenai River late-run coho salmon. The staff, at the Board meeting, voiced a concern about the 15 August closing in that it may create a management problem on even years when large numbers of Kenai River pink salmon would be returning during the first half of August and possibly running past 15 August. Past records indicate that the Kenai River pink salmon have been available to the commercial fishermen in large numbers as late as 26 August (1968). The fluctuations around the average run timing may be caused by changes in the tide cycle from year to year.

COMMERCIAL HERRING FISHERY

Commercial herring fishing began in Cook Inlet in 1914 as a gill net fishery in the Halibut Cove area of Kachemak Bay. The industry expanded rapidly and by 1925 there were eight salteries in Cook Inlet - six of these in Halibut Cove, one in Seldovia and one in Port Graham. Gill netting remained the chief method of catching herring until 1923 when purse seining was introduced. In 1927 the stocks were apparently depleted and it was no longer economical to fish the area. During the three highest years of production in Kachemak Bay, 1924 through 1926, the total annual harvest averaged about 8,000 tons. The average annual catch throughout the span of the active fishery in Kachemak Bay, from 1914-1928, was 2,850 tons.

The next major herring fishery to occur in the Cook Inlet management area was a purse seine operation for reduction purposes in the Day Harbor-Resurrection Bay area. This fishery began in 1939 and lasted through 1959. The annual catch during the three highest years, 1944-1946, averaged about 16,500 tons while the average for all years of operation was 3,500 tons.

The present fishery in the Cook Inlet area began as a purse seine operation in 1969, with a catch of 1,347 tons, and was initiated primarily to supply roe for the Japanese market. The herring are fished at a time when the roe is at its highest development which is immediately prior to spawning. The roe fishery in Cook Inlet runs from early May through mid-June.

The catch from this fishery peaked in 1970 when 4,800 tons were taken, 2,700 from the Southern District and 2,100 from the Eastern District. The catch dropped in 1971 to 986 tons taken mostly in the Eastern District and to only 96 tons in 1972 with most of the catch again coming from the Eastern District. The large reduction in the catches during 1971 and 1972 appears to be due to a combination of late, cold spring weather experienced in those years plus the possibility that the herring stocks in the Eastern and Southern Districts were over harvested in 1970. Market problems also played a role in keeping the 1972 catch low.

In 1973, fair weather and a four-fold increase in price combined to produce a catch of 1,592 tons. The fair weather and good prices allowed fishermen to search for herring in areas that had rarely, if ever, been fished before. Fair concentrations of herring were located in several bays in the Outer District and in the northern end of the Kamishak Bay District. A new herring fishery also developed in the Central District where set gillnets were utilized.

Prior to the 1973 season, a 4,000 ton quota was set for the entire Cook Inlet area. Good prices and fair weather continued in 1974 and a catch of 2,692 tons was achieved. Effort was again spread out and catches were made in all districts. Nearly 80% of the total catch was taken from the Kamishak Bay District.

Analysis of the data collected during the 1974 season showed that the Kamishak Bay District had not only the best quality herring but also the healthiest population. There appeared to be good numbers of herring in the area, spawning was plentiful and the harvest was well distributed through several age classes. Herring in the Eastern and Outer Districts were lacking in quantity as well as quality with the harvest depending heavily on age four fish. Southern District herring were of good quality but hard to find and herring in the Central District were plentiful but poor quality, good for bait only.

Almost all of the harvest of 4,149 tons in 1975 and 4,849 tons in 1976 came from the Kamishak Bay District. The only exception to this was the small bait harvest from the Central District. In 1976 about 3,500 tons of herring were spotted in the Southern District but they were too young for sufficient roe quality and no fishery was held.

During the 1976 season, a deficiency in the age composition of the Kamishak Bay herring became apparent. The 1971 and 1972 age classes were very weak. These age classes would normally be expected to produce a significant portion of the 1977 and 1978 harvest and would be contributing in lesser degrees to the harvest through 1981. Therefore, it was necessary to reduce the quota in the Kamishak Bay District for the next few years to compensate for the expected deficiency.

Prior to the 1977 season, the 4,000 ton quota was changed to a guideline harvest level to allow management more flexibility if

large numbers of herring materialized. For the 1977 season, the harvest level for the Kamishak Bay District was set between 2,700 and 3,000 tons to compensate for the weak 1971 and 1972 parent years. The harvest from other districts would depend on the show of herring to those areas.

The 1978 commercial herring season operated under a new set of regulations. The most significant change was the complete closure of the Southern, Eastern, Outer, and Kamishak Bay Districts to herring fishing from 15 April through 30 June unless opened by emergency order. During this time period, purse seines were the only legal type of gear in the areas.

This change in management strategies, e.g., switching from an "open season until closed" to a "closed season until opened", required the Department to assess the abundance of herring in an area on a regular basis to determine when a commercial herring fishery should occur and how many tons of herring could be harvested. To accomplish this, aerial surveys were made on a daily basis, weather permitting, in the Kamishak Bay District. Less frequent flights were made over the remaining districts due to their lesser contribution to the herring fishery.

Regulations governing the 1979 commercial herring fishery in the Eastern, Outer, Southern, and Kamishak Bay Districts were essentially the same as in 1978. One major change in the regulations for the Central District was to make the Chinitna Bay Subdistrict open to set gillnets only. Both set and drift gillnets could be used in the remainder of the Central District.

As during the 1978 herring season, the 1979 season in the Kamishak Bay District was managed by the Upper Cook Inlet Area Management Biologist who lived aboard a tender in Kamishak Bay for the duration of the herring fishery. The Lower Cook Inlet Area Management Biologist managed the herring fishery in the Southern, Eastern, and Outer Districts from the Homer office. The Upper Cook Inlet gill net herring fisheries were more monitored than managed, primarily due to a lack of available personnel.

The first aerial survey of the 1979 season was conducted on 26 April. This survey showed that there were 300-400 tons of herring in shallow water between Kamishak River and Douglas River. It appeared that a limited amount of spawning was occurring at that time. No herring were observed in the remainder of the Kamishak Bay District.

An aerial survey of 4 May showed approximately 150 tons of herring along the north shore of Ursus Cove and some spawn (no herring visible) in Iniskin Bay. More spawn was sighted at Contact Point on 6 May plus an additional 200-250 tons of herring off Chenik Head and 200 tons in Iniskin Bay. Bad weather precluded any further surveys until 9 May when a minimum of 800 tons of herring were seen.

The entire Kamishak Bay District was opened to commercial herring

fishing at 8:00 A.M. on 12 May with a goal of harvesting 400 tons of herring (approximately 20% of the stocks observed). This fishery was extended four times by emergency order due to low catches of herring as the result of marginal fishing weather. The fishery finally closed at 2:00 P.M. on 16 May with a total of 300 tons of herring having been harvested. Table summarizes the emergency orders issued for herring in 1979 and Table presents the 1979 Kamishak Bay catch by period.

Another herring fishing period was given from 12:00 noon to 6:00 P.M. on 19 May. This was the result of an aerial survey that morning showing a large concentration of herring in the area around Contact Point. A total of 51 tons of herring were taken during this fishing period.

The third and final fishing period was from 3:00 P.M. to 7:00 P.M. on 24 May. The allowable harvest for this opening was 50-100 tons of herring. The period ended with a total catch of 64 tons of herring.

The Southern, Eastern, and Outer Districts were flown on a less frequent basis than the Kamishak Bay District because of the smaller amounts of herring in these areas and the lower probability of a commercial fishing period in these areas. Near the end of May, herring were observed in the Bear Cove area of Kachemak Bay (Southern District). Samples were collected from one school of herring. The resultant data indicated that the herring were of sufficient size, age, and maturity (9.75% roe) that a small commercial fishery was warranted.

At 1:00 P.M. 31 May, that portion of Kachemak Bay from the south end of Bear Cove to the end of Glacier Spit was opened (by flare) to commercial herring fishing. The schools of herring in the area at that time turned out to be young and immature, primarily one and two year old fish which went through the mesh of the purse seines. A total of seven tons of herring were harvested during this opening.

During the period 1 March to 30 June, herring in the Central and Northern Districts may be taken by gill nets only. In past years, commercial herring fishing in these districts was done almost exclusively with set gillnets. However, drift gillnets were also used effectively during the 1979 season. Most of the drift gillnetting was done in the Tuxedni Bay area. Of the approximately 191 tons of herring harvested in Upper Cook Inlet this year, 177 tons were harvested by set gillnets and 14 tons were taken with drift gillnets. The Chinitna Bay set gillnet fishery accounted for 83 tons of herring, or 43% of all set gillnet caught herring. These were primarily sold as sac roe herring. Table 15 breaks the entire 1979 Cook Inlet herring catch down by area and gear type.

Age-weight-length samples collected from the Kamishak Bay purse seine caught herring indicated that the 5-year old age class was dominant with the 3-, 4-, and 6-year old herring also being

abundant and comprising the remainder of the harvest A comparison of the age structure of the 1979 Kamishak Bay catch with the 1978 Kamishak Bay catch indicates good recruitment and suggests that the stocks were not over-harvested in 1978. More herring were observed in the Kamishak Bay District in 1979 than in 1978, however, the commercial harvest for the two years was approximately equal. Therefore, it seems logical to assume that the Kamishak Bay herring were not over-harvested in 1979 either.

A similar analysis of the age structure from the Chinitna Bay herring fishery suggests that the 1978 catch of 62 tons was actually an over-harvest of those herring stocks. Therefore, the 1979 catch of 83 tons of herring in Chinitna Bay was probably excessive. As a result of this age structure analysis, the staff submitted a proposed regulation change setting a 35 ton quota on the Chinitna Bay herring fishery for the 1980 season.

COMMERCIAL RAZOR CLAM FISHERY

The 1979 Upper Cook Inlet razor clam harvest of 144,358 pounds represents a three-fold increase over the previous year and is indicative of renewed interest in this underutilized resource. Marketed for human consumption in the Pacific Northwest, the harvest came entirely from the Polly Creek area and was hand-dug. Approximately 20 diggers were active at any one time with the harvest confined to the summer months. Lack of funding precluded collection of any biological data from the harvest.

SUBSISTENCE FISHERIES

Prior to subsistence fishing in Cook Inlet, one must obtain a subsistence fishing permit from the Department. Any resident of the State of Alaska is eligible for a permit. This permit entitles the permit holder to harvest up to 50 salmon, in any combination of species.

The subsistence fishing regulations for Upper Cook Inlet were changed substantially by the Board of Fisheries at their meeting in Anchorage in April 1979. The three major changes were:

1) To change the season;
2) Further restrict those areas open to subsistence fishing; and
3) Reduce the amount of gear one may use.

The impetus for changing the season was to reduce the pressure on the Kenai River late-run coho salmon. This was accomplished by changing the season from late in the fall to approximately the same dates as the commercial fishing season. Thus, the subsistence pressure was directed toward those stocks of salmon which are the most abundant and, therefore, should be the least likely to be adversely affected by additional fishing pressure. Subsistence fishing in 1979 was limited to the time period

23 June through 15 August and only on Saturdays from 6:00 A.M. to 6:00 P.M.

In past years, subsistence fishing was allowed in any area open to commercial fishing and with either set or drift gillnets (even through almost all subsistence fishing was done with set gillnets). Under the 1979 regulations, subsistence fishing was limited to set gillnets and the entire Upper Subdistrict of the Central District was closed to subsistence fishing.

The reduction in the amount of gear which could be used was associated with changing the dates of the subsistence season to coincide with the commercial season. Logically, if one is fishing when greater numbers of fish are available, less gear is needed to catch one's limit of 50 salmon.

The number of subsistence fishing permits issued for Upper Cook Inlet has risen sharply over the past two years, increasing from an average (1971-1977) of 87 permits per year to 323 permits in 1978 and 1,161 permits in 1979 (Appendix Table 13). The number of subsistence caught fish has increased accordingly.

LEGAL DECISIONS

Two lawsuits pertaining to Upper Cook Inlet fisheries were active in 1979. The first, Kenai Peninsula Fishermen's Cooperative Association vs. Alaska Board of Fisheries, 3KN 78-883 CIV, sought to overturn the Comprehensive Management Plan allocating specific stocks of salmon to various groups adopted as policy in 1978. Ultimately pursued to the State Supreme Court, a decision rendered in 1980 favored the plaintiff but on procedural grounds only. The Board's authority to allocate fisheries resources was reaffirmed. The procedural errors were corrected by adoption of the policy as a regulation in 1981. The other suit, Cook Inlet Fishermen's Association vs. Alaska Board of Fisheries, 3KN 78-235 CIV, paralleled the KPFCA suit and was dropped following the Supreme Court decision.

Table 1. Commercial salmon catch by area and gear type, Upper Cook Inlet, 1979.

Gear/Area	Chinook	Sockeye	Coho	Pink	Chum	Total
DRIFT	1,089	454,707	114,496	19,554	609,239	1,199,085
CENTRAL SET						
Upper	8,671	248,828	29,727	20,033	907	308,166
Kalgin Island	470	44,980	27,707	2,617	2,838	78,612
Kustatan	142	4,049	4,985	3,167	944	13,287
Western	1,619	56,807	30,235	882	18,943	108,486
Chinitna Bay	33	2,586	5,379	395	7,617	16,010
Subtotal	10,935	357,250	98,033	27,094	31,249	524,561
NORTHERN SET						
Eastern	296	60,912	17,692	3,705	553	83,158
General	1,418	51,537	34,943	22,627	8,717	119,242
Subtotal	1,714	112,449	52,635	26,332	9,270	202,400
SEINE	0	9	2	2	599	612
GRAND TOTAL	13,738	924,415	265,166	72,982	650,357	1,926,658

Table 2. Catch by period and species for drift gill nets in the Central District, 1979.

Date	Chinook	Sockeye	Coho	Pink	Chum
625	89	8031	83	42	965
629	204	30783	300	197	5631
702	159	57398	993	222	17680
706	277	48804	1052	564	19865
709	123	111143	2982	2829	43703
713	39	91619	4293	1359	31437
716	1	770	144	20	1028
720	72	67059	36512	7529	96085
723	43	19990	15410	3791	52518
727	33	12062	16783	947	89575
730	18	4254	11162	1302	67879
803	16	1689	9605	463	83190
806	6	574	3628	187	56497
817	4	119	3920	40	31598
820	4	47	1518	14	4032
824	1	49	2121	7	6518
827	0	87	1681	9	548
830	0	92	604	32	267
831	0	133	752	0	134
903	0	3	816	0	85
907	0	0	35	0	4
910	0	0	73	0	0
917	0	1	29	0	0
Total	1089	454707	114496	19554	609239

Table 3. Catch by period and species for set gill nets in the Upper Subdistrict, 1979.

Date	Chinook	Sockeye	Coho	Pink	Chum
613	0	1	2	0	0
625	750	17111	120	305	1
629	558	15799	101	656	2
702	657	12698	34	1882	23
706	1400	55421	216	317	21
709	764	12602	112	4207	22
713	1457	23157	440	3061	8
718	0	1469	443	50	40
720	713	65058	8092	3245	582
722	153	5847	785	792	37
723	601	18417	4162	3198	69
725	196	3058	1051	582	3
727	396	7293	2168	450	32
730	440	4722	4294	571	29
803	348	1667	2738	452	7
806	173	822	2509	221	9
810	31	3520	1285	26	6
813	34	166	1175	18	16
Total	8671	248828	29727	20033	907

Table 4. Catch by period and species for set gill nets in the Kalgin Island Subdistrict, 1979.

Date	Chinook	Sockeye	Coho	Pink	Chum
625	100	2082	7	11	2
629	79	2966	22	67	3
702	39	2404	72	122	1
706	34	5206	852	201	455
709	48	3077	795	291	20
713	31	2651	1132	212	69
716	32	5237	3221	451	405
720	32	3614	3179	192	250
723	24	3741	3410	263	129
727	30	3850	4205	195	84
730	10	3041	3348	436	322
803	6	2466	1911	109	527
806	2	2254	1882	51	271
810	1	656	306	3	34
813	1	601	955	3	35
817	1	707	740	5	84
820	0	166	208	1	17
824	0	129	321	2	45
827	0	90	307	1	16
831	0	25	236	1	21
903	0	15	438	0	42
907	0	2	160	0	6
Total	470	44980	27707	2617	2838

Table 5. Catch by period and species for set gill nets in the Kustatan Subdistrict, 1979.

Date	Chinook	Sockeye	Coho	Pink	Chum
625	35	26	0	0	0
629	6	47	2	2	4
702	22	124	5	15	8
706	38	979	121	31	25
709	5	65	21	108	0
713	6	684	310	660	45
716	3	648	379	788	1
720	4	409	521	518	1
722	1	203	522	61	2
723	0	239	364	320	54
725	14	23	0	0	0
727	2	218	324	223	44
730	0	208	509	281	2
803	1	92	224	80	87
806	1	27	290	56	27
810	2	17	539	4	4
813	0	9	76	4	9
817	1	17	260	14	129
820	1	6	166	2	140
824	0	1	87	0	24
827	0	3	42	0	307
831	0	4	144	0	27
917	0	0	79	0	4
Total	142	4049	4985	3167	944

Table 6. Catch by period and species for set gill nets in the Western Subdistrict, 1979.

Date	Chinook	Sockeye	Coho	Pink	Chum
618	642	3003	98	8	88
622	349	2635	9	12	5
625	189	3239	4	8	23
629	123	5371	107	20	34
702	71	4665	130	61	74
706	43	4546	178	27	181
709	32	4427	645	65	261
713	23	4959	1439	50	419
716	28	4186	2053	115	708
718	26	6204	1727	83	621
720	15	3952	2012	61	641
722	6	1352	1011	18	444
723	7	1714	2048	24	577
725	4	1860	1769	40	407
727	0	1022	1447	29	980
730	20	1430	2838	108	2011
803	8	893	2483	63	2213
806	1	406	1580	36	2605
810	0	56	577	2	468
813	2	56	1433	14	1240
817	0	28	1736	18	1391
820	0	78	1578	10	1423
824	30	702	951	4	1195
827	0	7	533	1	429
831	0	8	659	4	268
903	0	6	853	0	166
907	0	2	337	1	71
Total	1619	56807	30235	882	18943

Table 7. Catch by period and species for set gill nets in the Chinitna Bay Subdistrict, 1979.

Date	Chinook	Sockeye	Coho	Pink	Chum
625	7	123	1	3	19
629	6	140	1	4	77
702	2	112	1	15	237
706	2	82	8	7	103
709	6	547	148	17	342
713	0	347	79	32	723
716	2	674	821	67	973
718	0	71	14	20	543
720	3	82	42	14	218
723	1	51	117	17	336
727	0	6	97	14	308
730	2	25	152	46	601
803	1	302	457	59	282
806	0	14	304	43	483
817	0	0	1046	22	473
820	0	0	727	6	411
824	1	5	236	3	483
827	0	2	471	5	297
831	0	1	323	1	586
903	0	2	315	0	104
907	0	0	19	0	18
Total	33	2586	5379	395	7617

Table 8. Catch by period and species for set gill nets in the Eastern Subdistrict (Northern District), 1979.

Date	Chinook	Sockeye	Coho	Pink	Chum
625	184	583	2	60	0
629	57	1141	8	142	2
702	13	579	5	126	0
706	15	11418	66	203	9
709	8	1194	24	118	6
713	1	2300	126	323	4
716	3	5363	903	815	2
718	9	14784	4114	550	105
720	3	17078	7762	777	292
723	2	2697	2234	322	118
727	0	1614	507	122	5
730	0	1138	849	69	2
803	0	606	288	47	0
806	0	295	469	30	6
810	0	37	109	0	1
813	1	85	226	1	1
Total	296	60912	17692	3705	553

Table 9. Catch by period and species for set gill nets in the General Subdistrict (Northern District), 1979.

Date	Chinook	Sockeye	Coho	Pink	Chum
625	796	151	4	23	5
629	182	193	1	32	22
702	127	315	19	122	2
706	117	9647	1038	515	4556
709	41	980	138	416	76
713	22	2740	1331	2326	116
716	23	4272	2615	3334	206
720	21	21160	14045	8639	2652
723	11	7659	7016	3264	450
725	53	7	0	0	0
727	15	2717	3252	1592	130
730	5	1126	3149	1425	299
803	1	400	489	685	27
806	3	151	1226	231	161
810	1	19	620	23	15
Total	1418	51537	34943	22627	8717

Table 10. Catch by period and species for all gear types in Upper Cook Inlet, 1979.

Date	Chinook	Sockeye	Coho	Pink	Chum
613	0	1	2	0	0
618	642	3003	98	8	88
622	349	2635	9	12	5
625	2150	31346	221	452	1015
629	1215	56440	542	1120	5775
702	1090	78295	1259	2565	18025
706	1926	136103	3531	1865	25215
709	1027	134035	4865	8051	44430
713	1579	128457	9150	8023	32821
716	92	21159	10138	5592	3922
718	35	22528	6298	703	1309
720	863	178412	72165	20975	100721
722	160	7402	2318	871	483
723	689	54508	34761	11199	54251
725	267	4948	2820	622	410
727	476	28782	28783	3572	91158
730	495	15944	26301	4238	71145
803	381	8115	18195	1958	86333
806	186	4543	11888	855	60059
810	35	4305	3436	58	528
813	38	917	3865	40	1301
817	6	871	7702	99	33675
820	5	297	4197	33	6023
824	32	886	3716	16	8265
827	0	189	3034	16	1597
830	0	92	604	32	267
831	0	171	2114	6	1036
903	0	26	2422	0	397
907	0	4	551	1	99
910	0	0	73	0	0
917	0	1	108	0	4
Total	13738	924415	265166	72982	650357

Table 11. Emergency order summary, Upper Cook Inlet commercial salmon fishery, 1979.

Base fishing time - 6:00 a.m. to 6:00 p.m. on Monday and Friday. For district and subdistrict boundaries, see map (Figure 1).

Emergency Order Number	Effective Date	Description	Reason
2S-10-79	6/15	Change the boundary marker on the south shore of Chinitna Bay from the two large oil tanks to the ADF&G marker in front of the old crane.	Preclude fishing in a small cove where salmon mill, thus being exceptionally vulnerable to being harvested.
2S-12-79	7/13	Reduce the Central District drift gill nets and the Kalgin Island subdistrict set gillnet fishing time to six hours, i.e., 6:00 a.m. July 13 to 12:00 noon July 13, (Friday, standard period).	Declining catch and C.P.U.E. of sockeye salmon between 7/6 and 7/9 and a steadily decreasing escapement rate into the Kenai between 7/6 and 7/12 indicated that a 12-hour fishery by the drift fleet and Kalgin Island set nets could jeopardize attainment of the minimum escapement goal in the Kenai River. A 6-hour fishery in these areas was deemed justified to provide indices of abundance of sockeye stocks as well as an adequate number of scales for stock separation purposes.
2S-13-79	7/16	Closed fishing in the Upper Subdistrict of the Central District with set gillnets and the Central District with drift gillnets from 6:00 a.m. to 6:00 p.m. July 16, (Monday, standard period).	Cumulative escapement and escapement rates to date in the Kenai River were at exceptionally low levels compared to past years. The drift fleet catch from 7/13 showed three things; 1) low catch; 2) low C.P.U.E.; and 3) only 53% of those fish caught were of Kenai River origin. Therefore, this closure was necessary to achieve an adequate sockeye salmon escapement into the Kenai River.
2S-14-79	7/18	Open fishing with set gillnets in the Eastern Subdistrict of the Northern District and in the Western and Chinitna Bay subdistricts of the Central District from 6:00 a.m. to 6:00 p.m., (Wednesday, extra period).	Sockeye escapement into Crescent River was nearing the expected upper range for this system. Indications to date showed that Chinitna Bay chum salmon were early and appearing in larger numbers than usual. Small sockeye salmon systems on the east side of the Northern District were experiencing large escapements.
2S-15-79	7/22	Open fishing with set gillnets in the Western Subdistrict and the Upper Subdistrict south of the Kasilof River in the Central District from 6:00 a.m. to 6:00 p.m., (Sunday, extra period).	Escapement into the Kasilof River was approaching the optimal goal of 117,000 and stock separation analysis indicated that 60-70% of the fish caught south of the Kasilof in the Upper Subdistrict were of Kasilof River origin, at that point in time. Escapement into Crescent River had already exceeded the anticipated 50,000 fish (stock separation analysis indicated that 90+% of the Western Subdistrict sockeye catch were of Crescent River origin).

Table 11, continued. Emergency order summary, Upper Cook Inlet commercial salmon fishery, 1979.

Emergency Order Number	Effective Date	Description	Reason
2S-16-79	7/25	Open fishing with set gillnets in the Western Subdistrict and the Upper Subdistrict south of the Kasilof River in the Central District from 6:00 a.m. to 6:00 p.m., (Wednesday, extra period).	Escapement into the Kasilof River was approaching the optimal goal of 117,000 and stock separation analysis indicated that 60-70% of the fish caught south of the Kasilof in the Upper Subdistrict were of Kasilof River origin, at that point in time. Escapement into Crescent River has already exceeded that anticipated 50,000 fish (stock separation analysis indicated that 90+% of the Western Subdistrict sockeye catch were of Crescent River origin).
2S-17-79	8/10	Close fishing with set gillnets and purse seines in the Chinitna Bay Subdistrict of the Central District and with drift gillnets in the Central District from 6:00 a.m. to 6:00 p.m., (Friday, standard period).	Chum salmon escapements into Chinitna Bay tributaries were below average drift gillnet. Effort was high (2 1/2 times the average number of drift deliveries were made on 8/6) and CPUE was low (35% below average on 8/6), resulting in an overharvest of a weak chum stock.
2S-18-79	8/13	Close fishing with set gillnets, drift gillents and purse seines in the Chinitna Bay Subdistrict of the Central District with drift gillnets in the entire Central District and with set gillnets in the General Subdistrict of the Northern District from 6:00 a.m. to 6:00 p.m., (Monday, standard period).	Chum salmon escapements to Chinitna Bay tributaries as of 8/6 indicated a below average run. Escapement of chum salmon to the Susitna River at this date stood at about 20% of the desired escapement goal. A closure in the General Subdistrict of the Northern District at this time was a logical sequence to the closure as in 2S-17-79, as chum moving through the Central District on 8/10 should have been in the Northern District by 8/13 and were needed in the escapement.

Table 12. Commercial salmon fishing periods, Upper Cook Inlet, 1979.

Date	Day	Hours	Set	Drift
6/18	Mon.	0600-1800	Western	
6/22	Fri.	0600-1800	Western	
6/25	Mon.	0600-1800	All	All
6/29	Fri.	0600-1800	All	All
7/02	Mon.	0600-1800	All	All
7/06	Fri.	0600-1800	All	All
7/09	Mon.	0600-1800	All	All
7/13	Fri.	0600-1200	All	All
		1200-1800	All except Kalgin Island	
7/16	Mon.	0600-1200	All except Upper	
7/18	Wed.	0600-1200	Western, Chinitna, Eastern	
7/20	Fri.	0600-1200	All	All
7/22	Sun.	0600-1200	Western, Upper south of Kasilof River	
7/23	Mon.	0600-1800	All	All
7/25	Wed.	0600-1800	Western, Upper south of Kasilof River	
7/27	Fri.	0600-1800	All	All
7/30	Mon.	0600-1800	All	All
8/03	Fri.	0600-1800	All	All
8/06	Mon.	0600-1800	All	All
8/10	Fri.	0600-1800	All except Chinitna	
8/13	Mon.	0600-1800	All except Chinitna, General	
8/17*	Fri.	0600-1800	All except Upper, Northern District	All

*Fishing continued each Monday and Friday from 0600-1800 with setnet fishing closed in the Upper Subdistrict and Northern District.

Table 13. Aerial survey set gillnet counts by subdistrict, Upper Cook Inlet, 1979.

	Central District					Northern District	
Date	Upper	Kalgin	Kustatan	Western	Chinitna	General	Eastern
6/18				147			
6/22				144			
6/29	684					68	80
7/02	677	126				106	98
7/09	602					59	83
7/13	657						
7/20	731						
7/27	450						
8/06		100	18	135	17		
8/10						25	3
8/13	242						20

Table 14. Emergency order summary, Cook Inlet commercial herring fishery, 1979.

Emergency Order Number	Effective Date	Description	Reason
2S-01-79	4/14	Change the commercial smelt season in the Northern and Central Districts from 1 October through 1 June to 1 October through 14 April.	Eliminate the incidental catch of herring with gill nets having a mesh size smaller than 2 1/8 inches intended as legal gear for smelt.
2S-02-79	5/12	Open the Kamishak Bay District to commercial herring fishing from 8:00 a.m. 12 May to 2:00 p.m. 12 May.	Aerial surveys conducted over the previous two weeks indicated approximately 2,000 tons of herring in the Kamishak Bay District. Additionally, spawn had been observed in four widely separated areas. Therefore, a harvest of 10-20% of the observed stocks was warranted.
2S-03-79	5/12	Extend the Kamishak Bay District herring fishery from 2:00 p.m. 12 May to 2:00 p.m. 13 May.	No herring were taken during the preceding six-hour opening due to inclement weather. This 24-hour extension allowed for the harvest of up to 400 tons of herring.
2S-04-79	5/13	Extend the Kamishak Bay District herring fishery from 2:00 p.m. 13 May to 2:00 p.m. 14 May.	Only 33 tons of the original 400 ton goal had been taken by this time, warranting a 24-hour extensions.
2S-05-79	5/14	Extend the Kamishak Bay District herring fishery from 2:00 p.m. 14 May to 2:00 p.m. 15 May.	Only 200 tons of the original 400 ton goal had been taken by this time, warranting a 24-hour extensions.
2S-06-79	5/15	Extend the Kamishak Bay District herring fishery from 2:00 p.m. 15 May to 2:00 p.m. 16 May.	Only 270 tons of the original 400 ton goal had been taken by this time; weather forecasts for noon on 5/16 indicated winds may hinder the fleet from fishing.
2S-07-79	5/19	Open the Kamishak Bay District herring fishery south of the latitude of Ursus Head from 12:00 noon 19 May to 6:00 p.m. 19 May.	Aerial surveys flown at 8:00 a.m. on 5/19 indicated large concentrations of herring in the Contact Point area; approximately 300 tons of the previous 400 ton goal had been taken by 2:00 p.m. Wednesday, 16 May, leaving 100 tons of the previous 400 ton goal.
2S-08-79	5/24	Open the Kamishak Bay District herring fishery from 3:00 p.m. 24 May until closed by emergency order.	Aerial surveys flown at noon on 5/24 indicated 500 tons of herring in the Rocky Cove/Ursus Cove area. A 10 to 20% harvest of available stocks would allow for a 50 to 100 ton harvest.

- Continued -

Table 14, continued. Emergency order summary, Cook Inlet commercial herring fishery, 1979.

Emergency Order Number	Effective Date	Description	Reason
2S-09-79	5/24	Closed the Kamishak Bay District herring fishery at 7:00 p.m. 24 May.	Radio communication with processors taking fish in the district indicated approximately 64 ton of herring has been taken since the opening began. This 12.8% of the estimated stocks was almost exclusively taken from Rocky Cove, which was fished heavily during the previous two openings; therefore, the fishery was closed.
2S-11-79	6/15	Change the closing date on herring gillnetting from 30 June to 15 June.	Eliminate the large incidental catch of king salmon in herring gill nets resulting from a larger earlier-than-normal run of king salmon. Local herring stocks were insignificantly small at this time and some of the herring gillnet fishermen were actually targeting on these king salmon.

Table 15. Cook Inlet commercial herring catch by area and gear type, 1979.

Gear/Area		Pounds	Subtotals	Totals
		BAIT HERRING		
CENTRAL DISTRICT				
Set net	244-20, 30, 40	116,457		
	245-10	3,455		
	245-30	616		
Total set net			120,528	
Drift	244	30		
	245	2,123		
Total drift			2,153	
Central District Total				122,681
NORTHERN DISTRICT				
Set net	247-90	666	666	666
Total Upper Cook Inlet bait herring				123,347
		SAC ROE HERRING		
CENTRAL DISTRICT				
Set net	244-20	455		
	244-40	25,634		
	245-10	162,450		
	245-30	44,085	232,624	
Beach seine	245-10	160	160	
Drift	245-20, 90	19,770		
	245-30	4,978	24,748	
	244-40	584	584	
Total Upper Cook Inlet sac roe herring				258,116
SOUTHERN DISTRICT				
Seine	241-14	26,166	26,166	
KAMISHAK DISTRICT				
Seine	249-65	48,666		
	249-70	30,350		
	249-75	45,000		
	249-80	431,221		
	249-85	274,940	830,177	
Total Lower Cook Inlet sac roe herring				856,343
Total Cook Inlet sac roe herring				1,114,459

Table 16. Seldovia District tide tables, April-September, 1979.

HIGH Tides SELDOVIA District
APRIL 1979

DAY DATE	GUIDE DOT'S	TIME A. M.	FT.	TIME P. M.	FT.
1	SUN	3:55	19.2	4:43	16.8
2	Mon	4:35	17.4	5:33	15.0
3	Tues	5:20	15.5	6:39	13.4
4	Wed	6:18	13.9	7:58	12.6
5	Thur	7:34	12.8	9:27	12.8
6	Fri	9:06	12.8	10:30	13.7
7	Sat	10:20	13.7	11:13	14.9
8	SUN	11:10	14.9	11:45	16.1
9	Mon	11:52	16.2	...	...
10	Tues	0:14	17.3	12:28	17.3
11	Wed	0:43	18.3	1:04	18.2
12	Thur	1:12	19.2	1:39	18.7
13	Fri	1:41	19.6	2:14	18.7
14	Sat	2:13	19.8	2:51	18.4
15	SUN	2:45	19.5	3:33	17.6
16	Mon	3:21	18.9	4:16	16.6
17	Tues	4:03	18.0	5:09	15.5
18	Wed	4:51	16.8	6:13	14.5
19	Thur	5:51	15.6	7:26	14.1
20	Fri	7:14	14.8	8:45	14.7
21	Sat	8:40	14.9	9:51	16.0
22	SUN	9:59	15.9	10:46	17.6
23	Mon	11:02	17.3	11:32	19.1
24	Tues	11:55	18.7	...	...
25	Wed	0:14	20.3	12:46	19.6
26	Thur	0:54	21.1	1:30	20.0
27	Fri	1:32	21.3	2:13	19.8
28	Sat	2:09	20.8	2:55	19.1
DAYLIGHT TIME STARTS					
29	SUN	3:46	19.9	4:37	18.0
30	Mon	4:25	18.5	5:21	16.7

• BIGGER THE DOT—BETTER THE FISHING

LOW Tides SELDOVIA District
APRIL 1979

DAY DATE	GUIDE DOT'S	TIME A. M.	FT.	TIME P. M.	FT.
1	SUN	10:19	−1.2	10:29	2.8
2	Mon	11:06	0.6	11:16	4.7
3	Tues	...	...	12:02	6.4
4	Wed	0:15	6.3	1:11	7.8
5	Thur	1:37	7.1	2:39	8.1
6	Fri	3:12	6.9	3:53	7.7
7	Sat	4:22	5.7	4:46	6.9
8	SUN	5:07	4.2	5:26	5.1
9	Mon	5:45	2.7	5:58	3.3
10	Tues	6:19	1.3	6:30	0.7
11	Wed	6:50	0.0	7:01	−0.3
12	Thur	7:22	−1.0	7:33	−0.9
13	Fri	7:56	−1.7	8:08	−0.4
14	Sat	8:31	−2.0	8:41	1.0
15	SUN	9:07	−1.9	9:20	1.8
16	Mon	9:47	−1.5	10:02	2.9
17	Tues	10:34	−0.6	10:51	4.0
18	Wed	11:28	0.3	11:54	4.9
19	Thur	...	...	12:36	5.2
20	Fri	1:14	5.2	1:56	5.3
21	Sat	2:39	4.4	3:14	5.0
22	SUN	3:53	2.6	4:17	3.9
23	Mon	4:52	0.5	5:10	−0.7
24	Tues	5:42	−1.6	5:58	−1.3
25	Wed	6:28	−3.2	6:41	−1.5
26	Thur	7:11	−4.2	7:22	−1.9
27	Fri	7:52	−4.5	8:03	−0.5
28	Sat	8:32	−4.1	8:41	0.5
DAYLIGHT TIME STARTS					
29	SUN	10:13	−3.1	10:23	1.9
30	Mon	10:52	−1.6	11:06	3.3

STANDARD TIME THRU APRIL 28

HIGH Tides SELDOVIA District
MAY 1979

DAY DATE	GUIDE DOT'S	TIME A. M.	FT.	TIME P. M.	FT.
1	Tues	5:03	16.9	6:09	15.9
2	Wed	5:48	15.9	7:05	14.0
3	Thur	6:41	13.7	8:09	13.9
4	Fri	7:50	12.5	9:21	13.1
5	Sat	9:13	12.9	10:24	13.7
6	SUN	10:32	12.7	11:15	14.6
7	Mon	11:31	13.7	11:52	15.8
8	Tues	...	...	12:18	14.9
9	Wed	0:26	16.9	1:00	16.1
10	Thur	1:00	18.1	1:40	17.2
11	Fri	1:32	19.0	2:20	17.9
12	Sat	2:07	19.7	2:57	18.3
13	SUN	2:43	20.0	3:39	18.3
14	Mon	3:21	19.9	4:21	17.9
15	Tues	4:03	19.3	5:08	17.2
16	Wed	4:49	18.3	5:59	16.5
17	Thur	5:43	17.1	7:01	15.8
18	Fri	6:46	15.7	8:06	15.6
19	Sat	8:02	14.8	9:13	15.9
20	SUN	9:24	14.5	10:17	16.6
21	Mon	10:41	15.1	11:13	17.7
22	Tues	11:49	16.1	...	...
23	Wed	0:02	18.7	12:45	17.1
24	Thur	0:47	19.6	1:32	17.9
25	Fri	1:27	20.0	2:17	18.4
26	Sat	2:07	20.1	3:00	18.5
27	SUN	2:44	19.8	3:40	18.2
28	Mon	3:21	19.0	4:21	17.5
29	Tues	4:00	18.0	5:03	16.7
30	Wed	4:39	16.8	5:43	15.8
31	Thur	5:21	15.4	6:30	14.9

• BIGGER THE DOT—BETTER THE FISHING

LOW Tides SELDOVIA District
MAY 1979

DAY DATE	GUIDE DOT'S	TIME A. M.	FT.	TIME P. M.	FT.
1	Tues	11:35	0.0	11:50	4.8
2	Wed	...	...	12:24	1.7
3	Thur	0:46	6.0	1:21	3.0
4	Fri	1:58	6.7	2:31	3.9
5	Sat	3:23	6.5	3:45	4.2
6	SUN	4:37	5.5	4:45	3.8
7	Mon	5:30	4.0	5:33	3.3
8	Tues	6:10	2.4	6:15	2.6
9	Wed	6:47	0.8	6:51	2.0
10	Thur	7:21	−0.7	7:27	1.5
11	Fri	7:56	−1.9	8:04	1.2
12	Sat	8:31	−2.9	8:43	1.1
13	SUN	9:11	−3.4	9:22	1.4
14	Mon	9:51	−3.4	10:05	1.9
15	Tues	10:34	−3.0	10:52	2.5
16	Wed	11:21	−2.2	11:45	3.3
17	Thur	...	...	12:17	−1.1
18	Fri	0:49	3.8	1:18	0.1
19	Sat	2:03	3.8	2:29	0.9
20	SUN	3:21	3.0	3:40	1.2
21	Mon	4:34	1.5	4:46	1.2
22	Tues	5:33	−0.2	5:41	0.9
23	Wed	6:25	−1.9	6:31	0.7
24	Thur	7:11	−3.1	7:16	0.6
25	Fri	7:53	−3.9	8:01	0.7
26	Sat	8:34	−4.0	8:41	1.1
27	SUN	9:12	−3.7	9:21	1.7
28	Mon	9:51	−2.9	10:02	2.6
29	Tues	10:29	−1.8	10:42	3.5
30	Wed	11:08	−0.6	11:27	4.5
31	Thur	11:51	0.8	...	...

DAYLIGHT TIME

HIGH Tides SELDOVIA District
JUNE 1979

DAY DATE	GUIDE DOT'S	TIME A. M.	FT.	TIME P. M.	FT.
1	Fri	6:09	14.0	7:20	14.2
2	Sat	7:05	12.9	8:15	13.9
3	SUN	8:17	12.1	9:13	14.0
4	Mon	9:33	12.1	10:06	14.6
5	Tues	10:45	12.7	10:53	15.5
6	Wed	11:44	13.7	11:38	16.6
7	Thur	...	...	12:32	15.0
8	Fri	0:18	17.7	1:19	16.2
9	Sat	1:00	18.8	2:00	17.3
10	SUN	1:41	19.7	2:42	18.0
11	Mon	2:21	20.3	3:24	18.5
12	Tues	3:05	20.4	4:10	18.6
13	Wed	3:51	20.0	4:58	18.3
14	Thur	4:41	19.1	5:47	17.9
15	Fri	5:35	17.8	6:41	17.4
16	Sat	6:37	16.3	7:38	17.0
17	SUN	7:47	15.0	8:39	16.8
18	Mon	9:05	14.3	9:42	17.0
19	Tues	10:24	14.3	10:40	17.4
20	Wed	11:33	14.9	11:33	17.9
21	Thur	...	...	12:34	15.8
22	Fri	0:23	18.5	1:24	16.6
23	Sat	1:06	18.8	2:06	17.2
24	SUN	1:46	19.0	2:47	17.6
25	Mon	2:24	19.0	3:24	17.7
26	Tues	3:02	18.6	4:01	17.5
27	Wed	3:40	18.0	4:38	17.1
28	Thur	4:19	17.2	5:14	16.6
29	Fri	4:57	16.1	5:51	16.0
30	Sat	5:40	14.9	6:33	15.4

• BIGGER THE DOT—BETTER THE FISHING

LOW Tides SELDOVIA District
JUNE 1979

DAY DATE	GUIDE DOT'S	TIME A. M.	FT.	TIME P. M.	FT.
1	Fri	0:17	5.3	12:38	5.1
2	Sat	1:15	5.9	1:31	3.3
3	SUN	2:24	5.9	2:33	4.1
4	Mon	3:39	5.2	3:38	−4.4
5	Tues	4:39	4.0	4:37	−4.3
6	Wed	5:30	2.5	5:25	4.0
7	Thur	6:10	0.8	6:11	3.3
8	Fri	6:52	−0.9	6:55	2.6
9	Sat	7:32	−2.4	7:38	2.0
10	SUN	8:12	−3.6	8:22	1.5
11	Mon	8:55	−4.3	9:06	1.3
12	Tues	9:37	−4.6	9:52	1.3
13	Wed	10:21	−4.2	10:41	1.5
14	Thur	11:10	−3.3	11:35	1.9
15	Fri	...	...	12:01	−2.1
16	Sat	0:36	2.3	12:57	−0.6
17	SUN	1:44	2.4	2:00	0.9
18	Mon	2:59	2.0	3:08	1.9
19	Tues	4:11	1.1	4:16	2.5
20	Wed	5:15	−0.1	5:17	2.7
21	Thur	6:10	−1.3	6:10	2.6
22	Fri	6:55	−2.2	7:00	2.4
23	Sat	7:37	−2.8	7:42	2.3
24	SUN	8:18	−3.1	8:24	2.3
25	Mon	8:56	−3.0	9:03	2.4
26	Tues	9:31	−2.5	9:42	2.7
27	Wed	10:07	−1.8	10:21	3.2
28	Thur	10:42	−0.9	11:00	3.7
29	Fri	11:19	0.3	11:43	4.3
30	Sat	11:59	1.5	...	...

DAYLIGHT TIME

HIGH Tides SELDOVIA District
JULY 1979

DAY DATE	GUIDE DOT'S	TIME A. M.	FT.	TIME P. M.	FT.
1	SUN	6:28	13.7	7:18	14.9
2	Mon	7:29	12.7	8:06	14.7
3	Tues	8:39	12.1	8:59	14.8
4	Wed	9:55	12.9	9:55	15.3
5	Thur	11:04	13.0	10:48	16.2
6	Fri	12:05	14.2	11:41	17.4
7	Sat	...	...	12:55	15.7
8	SUN	0:31	18.7	1:41	17.1
9	Mon	1:19	19.9	2:26	18.3
10	Tues	2:04	20.8	3:09	19.2
11	Wed	2:53	21.2	3:54	19.7
12	Thur	3:41	21.0	4:36	19.8
13	Fri	4:31	20.1	5:24	19.5
14	Sat	5:24	18.7	6:12	18.9
15	SUN	6:22	17.1	7:05	18.1
16	Mon	7:29	15.4	8:02	17.4
17	Tues	8:43	14.2	9:03	16.8
18	Wed	10:05	13.8	10:08	16.7
19	Thur	11:22	14.2	11:12	16.9
20	Fri	...	...	12:26	15.0
21	Sat	0:05	17.3	1:14	16.0
22	SUN	0:52	17.8	1:54	16.8
23	Mon	1:32	18.3	2:30	17.4
24	Tues	2:09	18.7	3:04	17.8
25	Wed	2:46	18.8	3:36	18.0
26	Thur	3:20	18.6	4:08	18.0
27	Fri	3:57	18.0	4:39	17.7
28	Sat	4:34	17.2	5:11	17.2
29	SUN	5:14	16.0	5:47	16.6
30	Mon	5:56	14.8	6:22	16.0
31	Tues	6:46	13.5	7:05	15.5

• BIGGER THE DOT—BETTER THE FISHING

LOW Tides SELDOVIA District
JULY 1979

DAY DATE	GUIDE DOT'S	TIME A. M.	FT.	TIME P. M.	FT.
1	SUN	0:33	4.8	12:41	2.8
2	Mon	1:29	5.1	1:31	4.0
3	Tues	2:33	5.0	2:32	4.9
4	Wed	3:43	4.2	3:34	5.4
5	Thur	4:45	2.9	4:40	5.1
6	Fri	5:38	1.2	5:38	4.4
7	Sat	6:26	−0.6	6:31	3.5
8	SUN	7:11	−2.4	7:17	2.4
9	Mon	7:53	−3.8	8:04	1.4
10	Tues	8:37	−4.8	8:51	0.6
11	Wed	9:22	−5.2	9:38	0.1
12	Thur	10:07	−4.8	10:28	0.0
13	Fri	10:52	−3.8	11:19	0.3
14	Sat	11:40	−2.3	...	...
15	SUN	0:17	0.8	12:32	−0.4
16	Mon	1:18	1.3	1:29	1.5
17	Tues	2:30	1.6	2:35	3.2
18	Wed	3:46	1.5	3:47	4.2
19	Thur	4:57	0.8	4:56	4.5
20	Fri	5:54	0.0	5:54	4.2
21	Sat	6:45	−0.8	6:45	3.8
22	SUN	7:27	−1.5	7:30	3.2
23	Mon	8:02	−1.9	8:07	2.7
24	Tues	8:36	−2.0	8:45	2.4
25	Wed	9:09	−1.9	9:21	2.3
26	Thur	9:44	−1.5	9:57	2.4
27	Fri	10:15	−0.8	10:32	2.7
28	Sat	10:47	0.2	11:11	3.2
29	SUN	11:23	1.5	11:51	3.7
30	Mon	11:59	2.8	...	...
31	Tues	0:36	4.2	12:41	4.2

DAYLIGHT TIME

Table 16, continued. Seldovia District tide tables, April-September, 1979.

HIGH Tides SELDOVIA District
AUGUST 1979

DAY DATE	GUIDE DOT'S	TIME A. M.	FT.	TIME P. M.	FT.
1	Wed	7:50	12.6	7:59	15.1
2	Thur	9:10	12.2	9:01	15.2
3	Fri	10:32	12.8	10:11	15.9
4	Sat	11:41	14.1	11:15	17.2
5	SUN	...	...	12:34	15.8
6	Mon	0:11	18.7	1:22	17.6
7	Tues	1:03	20.3	2:04	19.2
8	Wed	1:53	21.5	2:47	20.4
9	Thur	2:41	22.1	3:28	21.2
10	Fri	3:30	22.0	4:10	21.3
11	Sat	4:18	21.1	4:55	20.9
12	SUN	5:08	19.6	5:40	20.0
13	Mon	6:04	17.7	6:28	18.8
14	Tues	7:05	15.8	7:23	17.4
15	Wed	8:19	14.2	8:24	16.2
16	Thur	9:47	13.6	9:39	15.6
17	Fri	11:09	14.0	10:51	15.7
18	Sat	12:18	14.9	11:54	16.3
19	SUN	...	...	1:00	15.9
20	Mon	0:39	17.1	1:35	16.9
21	Tues	1:20	18.0	2:07	17.7
22	Wed	1:54	18.6	2:36	18.4
23	Thur	2:29	19.1	3:04	18.8
24	Fri	3:03	19.2	3:33	19.0
25	Sat	3:36	18.8	4:02	18.8
26	SUN	4:12	18.1	4:31	18.4
27	Mon	4:47	17.1	5:02	17.8
28	Tues	5:27	15.8	5:35	17.0
29	Wed	6:12	14.5	6:16	16.2
30	Thur	7:16	13.3	7:09	15.5
31	Fri	8:36	12.7	8:21	15.1

BIGGER THE DOT—BETTER THE FISHING

LOW Tides SELDOVIA District
AUGUST 1979

DAY DATE	GUIDE DOT'S	TIME A. M.	FT.	TIME P. M.	FT.
1	Wed	1:34	4.5	1:36	5.5
2	Thur	2:43	4.3	2:46	6.1
3	Fri	4:00	3.4	4:02	6.1
4	Sat	5:07	1.8	5:10	5.2
5	SUN	6:02	−0.1	6:07	3.8
6	Mon	6:50	−2.0	7:01	2.2
7	Tues	7:35	−3.6	7:49	0.6
8	Wed	8:20	−4.7	8:35	−0.7
9	Thur	9:03	−5.0	9:23	−1.5
10	Fri	9:46	−4.6	10:10	−1.7
11	Sat	10:31	−3.4	10:58	−1.3
12	SUN	11:16	−1.6	11:51	−0.4
13	Mon	...	...	12:04	0.6
14	Tues	0:49	0.8	12:57	2.8
15	Wed	1:58	1.8	2:03	4.7
16	Thur	3:17	2.4	3:23	5.8
17	Fri	4:37	2.2	4:40	5.9
18	Sat	5:41	1.5	5:46	5.3
19	SUN	6:29	0.7	6:34	4.4
20	Mon	7:08	0.0	7:14	3.4
21	Tues	7:43	−0.6	7:51	2.6
22	Wed	8:15	−1.0	8:24	1.9
23	Thur	8:43	−1.0	8:57	1.5
24	Fri	9:15	−0.8	9:30	1.3
25	Sat	9:45	−0.2	10:03	1.4
26	SUN	10:16	0.7	10:39	1.8
27	Mon	10:48	1.9	11:14	2.4
28	Tues	11:23	3.3	11:53	3.1
29	Wed	...	...	12:04	4.7
30	Thur	0:48	3.7	12:57	6.0
31	Fri	1:54	4.0	2:11	6.8

DAYLIGHT TIME

HIGH Tides SELDOVIA District
SEPTEMBER 1979

DAY DATE	GUIDE DOT'S	TIME A. M.	FT.	TIME P. M.	FT.
1	Sat	10:08	13.2	9:42	15.6
2	SUN	11:17	14.6	10:54	16.9
3	Mon	12:13	16.5	11:57	18.7
4	Tues	...	...	1:00	18.5
5	Wed	0:57	20.4	1:41	20.2
6	Thur	1:40	21.8	2:20	21.6
7	Fri	2:29	22.5	3:01	22.4
8	Sat	3:16	22.4	3:41	22.4
9	SUN	4:02	21.5	4:21	21.8
10	Mon	4:52	20.0	5:03	20.5
11	Tues	5:43	18.1	5:49	18.8
12	Wed	6:41	16.1	6:41	17.0
13	Thur	7:53	14.4	7:45	15.4
14	Fri	9:21	13.7	9:06	14.5
15	Sat	10:51	14.0	10:32	14.6
16	SUN	11:52	15.0	11:37	15.4
17	Mon	...	...	12:34	16.0
18	Tues	0:23	16.5	1:06	17.1
19	Wed	1:03	17.5	1:35	18.1
20	Thur	1:37	18.5	2:01	18.9
21	Fri	2:09	19.1	2:28	19.5
22	Sat	2:42	19.4	2:56	19.8
23	SUN	3:16	19.2	3:23	19.7
24	Mon	3:51	18.7	3:54	19.3
25	Tues	4:28	17.7	4:23	18.6
26	Wed	5:06	16.6	4:58	17.7
27	Thur	5:55	15.2	5:37	16.7
28	Fri	6:54	14.1	6:33	15.7
29	Sat	8:15	13.5	7:52	15.0
30	SUN	9:40	14.0	9:22	15.3

BIGGER THE DOT—BETTER THE FISHING

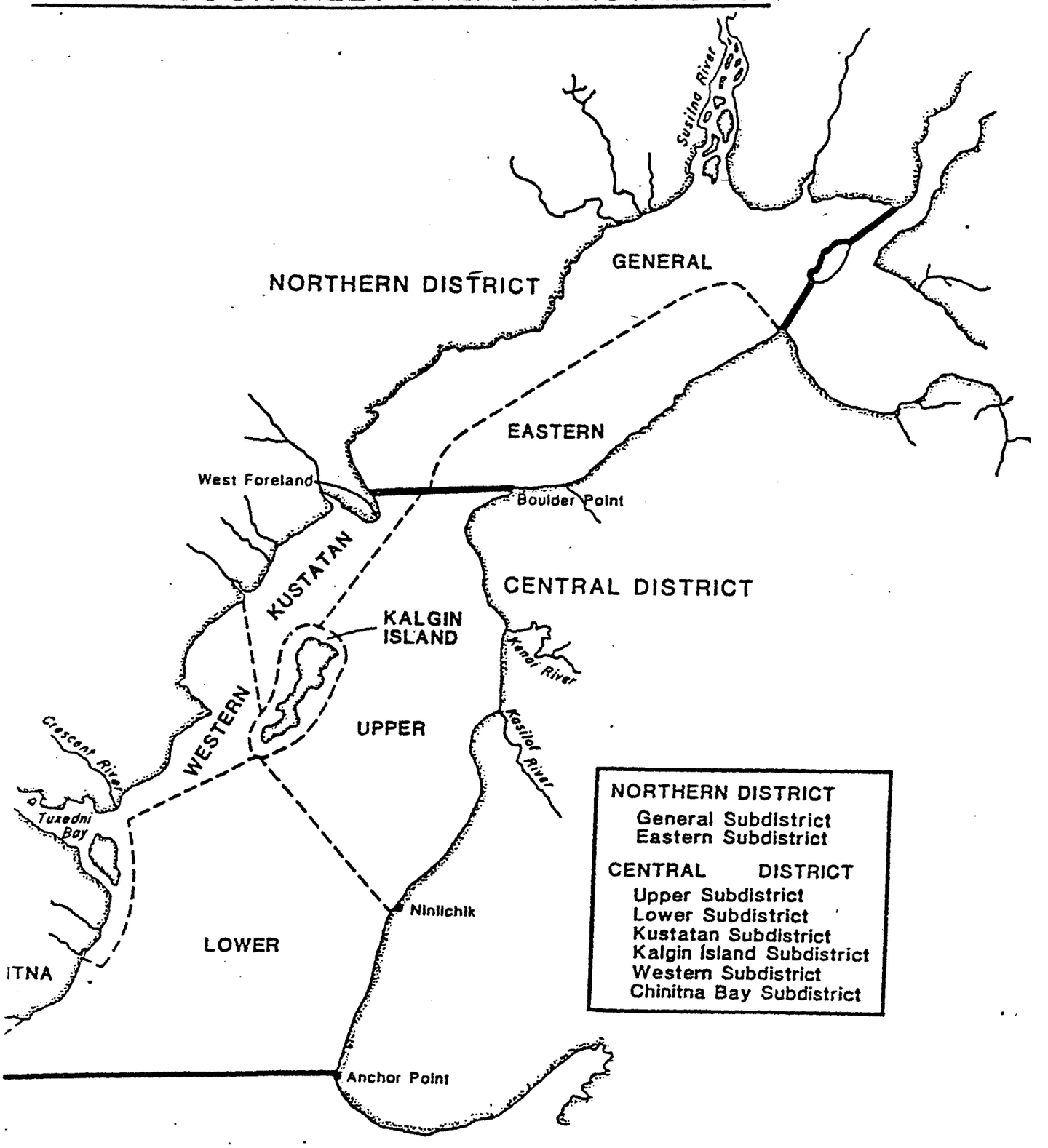
LOW Tides SELDOVIA District
SEPTEMBER 1979

DAY DATE	GUIDE DOT'S	TIME A. M.	FT.	TIME P. M.	FT.
1	Sat	3:21	3.6	3:37	6.7
2	SUN	4:37	2.2	4:53	5.4
3	Mon	5:38	0.4	5:54	3.5
4	Tues	6:29	−1.5	6:45	1.3
5	Wed	7:17	−3.0	7:33	−0.6
6	Thur	7:59	−3.9	8:18	−2.2
7	Fri	8:41	−4.1	9:04	−3.1
8	Sat	9:24	−3.5	9:49	−3.2
9	SUN	10:05	−2.2	10:35	−2.5
10	Mon	10:49	−0.3	11:24	−1.2
11	Tues	11:35	1.9	...	...
12	Wed	0:17	0.5	12:28	4.1
13	Thur	1:21	2.2	1:31	5.9
14	Fri	2:40	3.3	2:58	6.9
15	Sat	4:08	3.5	4:27	6.7
16	SUN	5:18	2.9	5:33	5.7
17	Mon	6:07	2.1	6:18	4.5
18	Tues	6:45	1.4	6:55	3.2
19	Wed	7:14	0.7	7:30	2.1
20	Thur	7:45	0.3	8:01	1.1
21	Fri	8:15	0.1	8:31	0.4
22	Sat	8:44	0.2	9:03	0.1
23	SUN	9:15	0.7	9:35	0.1
24	Mon	9:46	1.5	10:09	0.4
25	Tues	10:21	2.6	10:44	0.9
26	Wed	10:57	3.8	11:24	1.7
27	Thur	11:40	5.1	...	...
28	Fri	0:14	2.6	12:36	6.3
29	Sat	1:23	3.3	1:51	7.0
30	SUN	2:47	3.3	3:21	6.5

DAYLIGHT TIME

Figure 1.

UPPER COOK INLET SALMON DISTRICTS



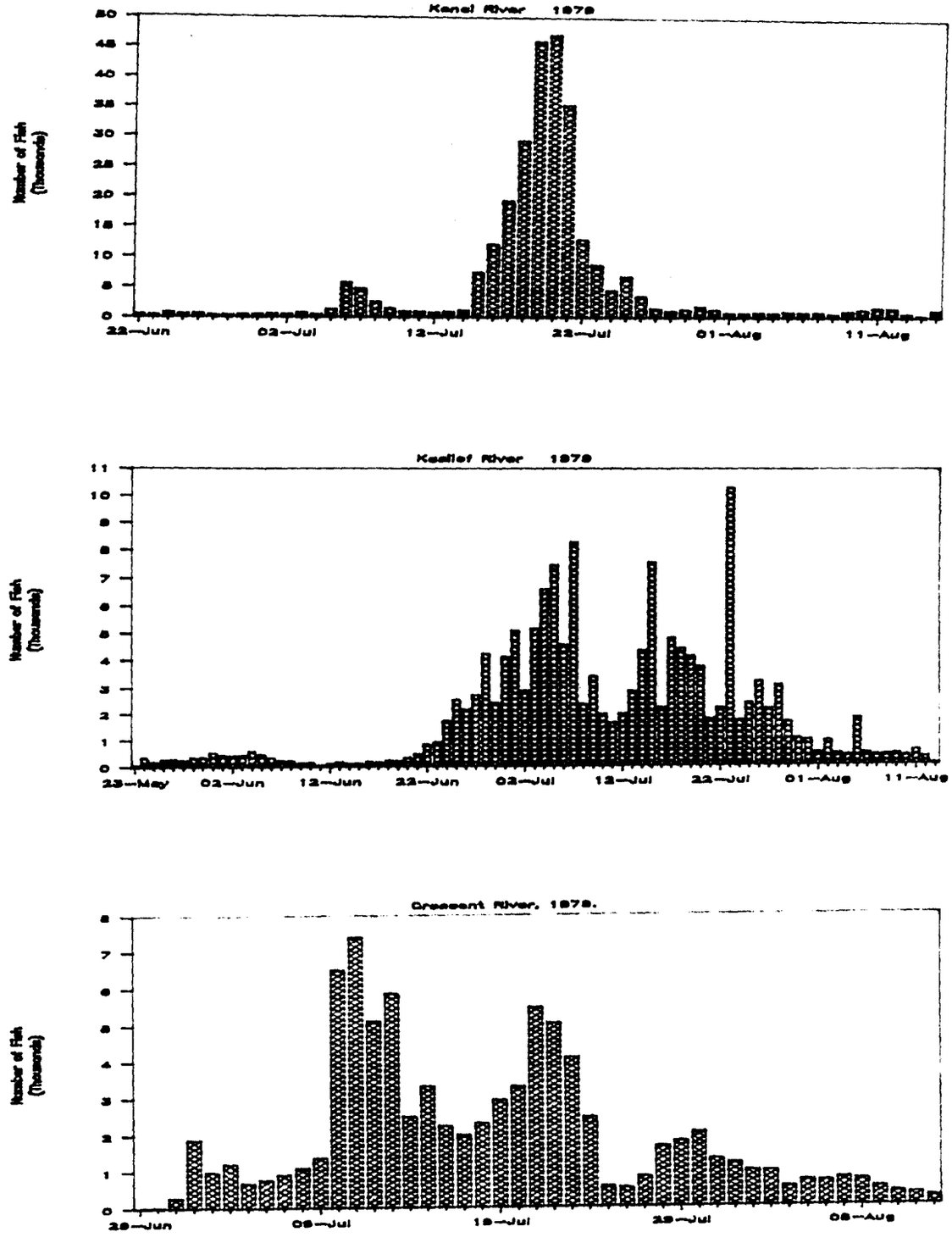


Figure 2. Daily sockeye salmon escapement counts for the Kenai, Kasilof and Crescent Rivers, 1979.

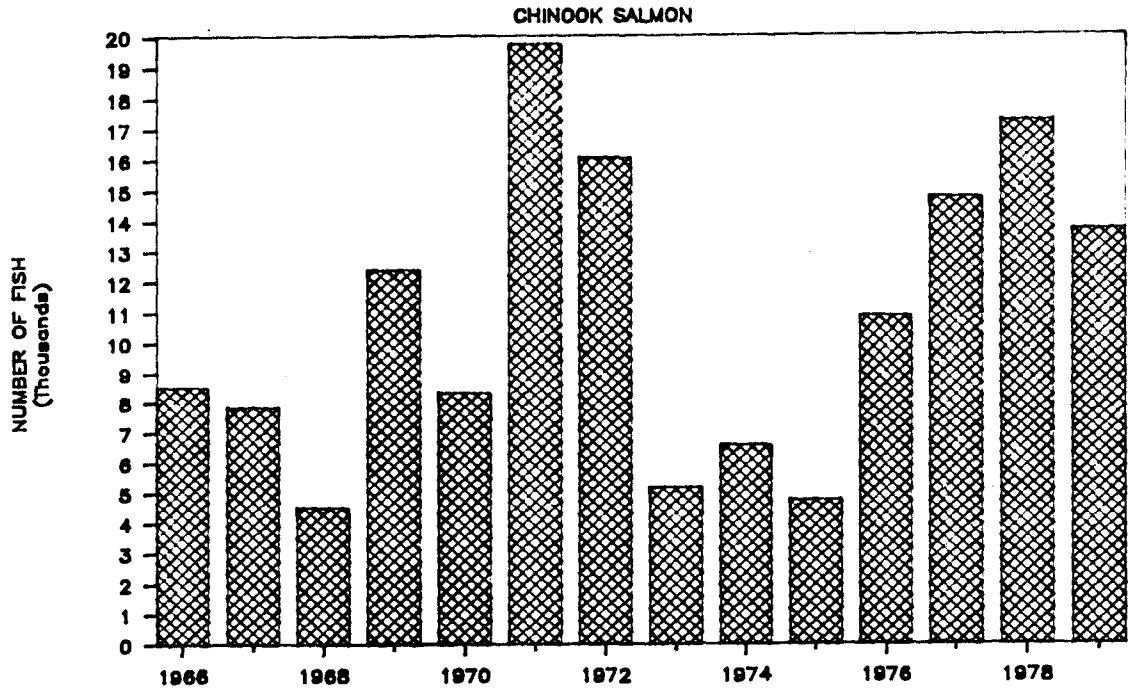


Figure 3. Chinook salmon commercial catch, Upper Cook Inlet, 1966-1979.

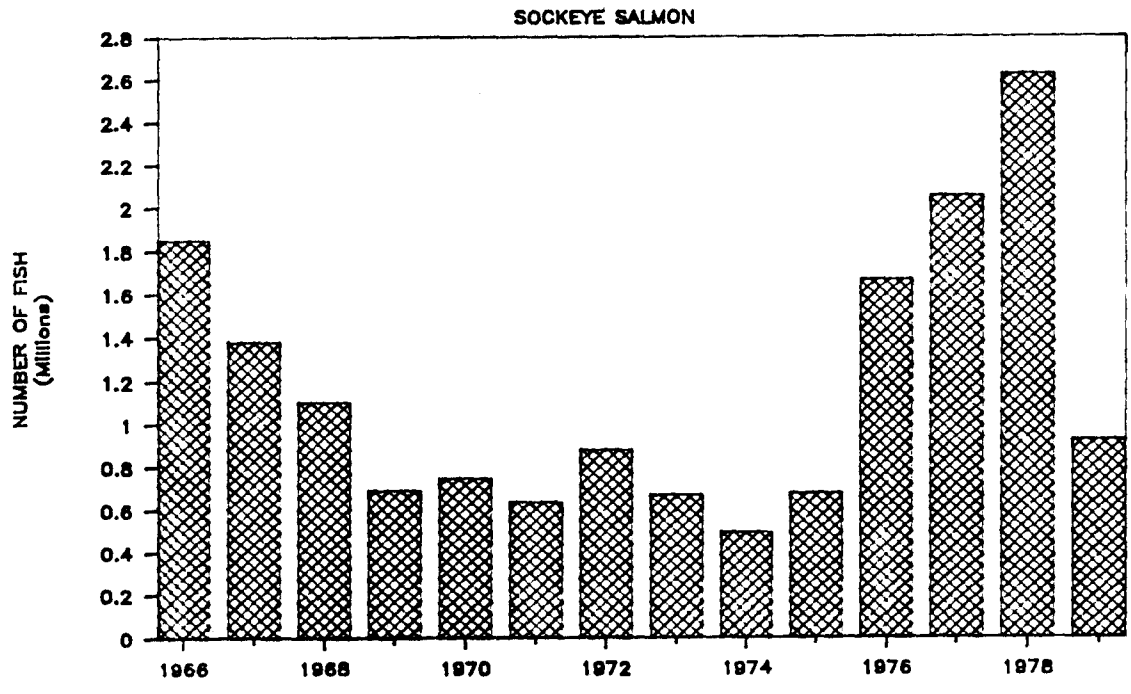


Figure 4. Sockeye salmon commercial catch, Upper Cook Inlet, 1966-1979.

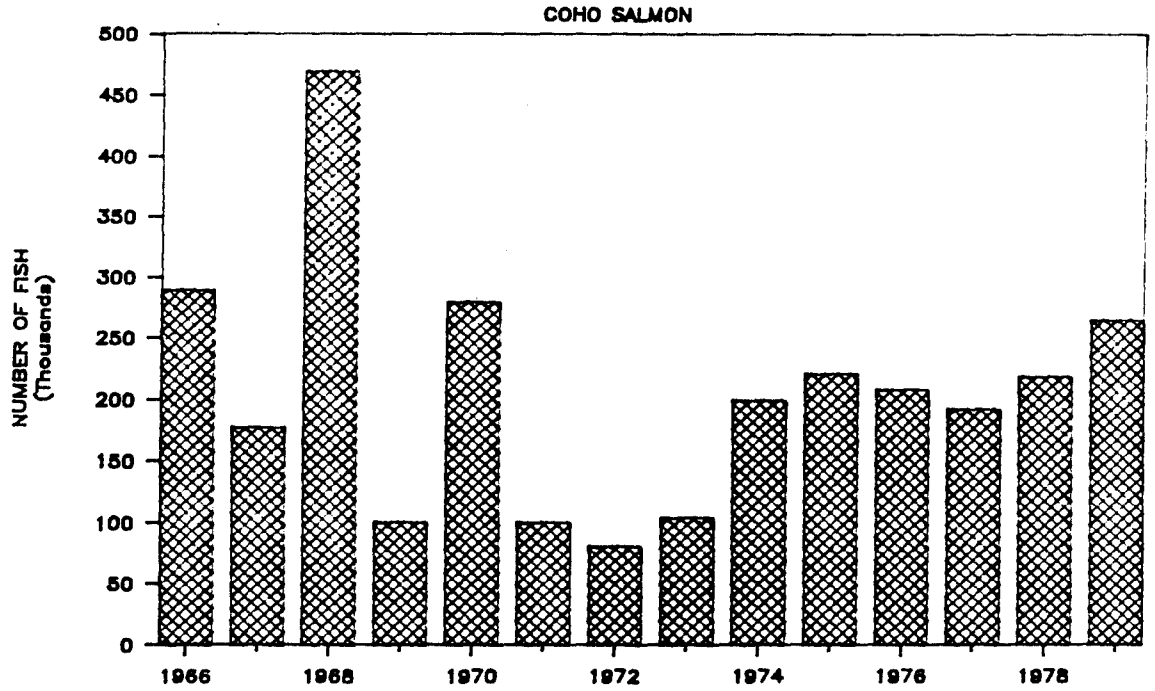


Figure 5. Coho salmon commercial catch, Upper Cook Inlet, 1966-1979.

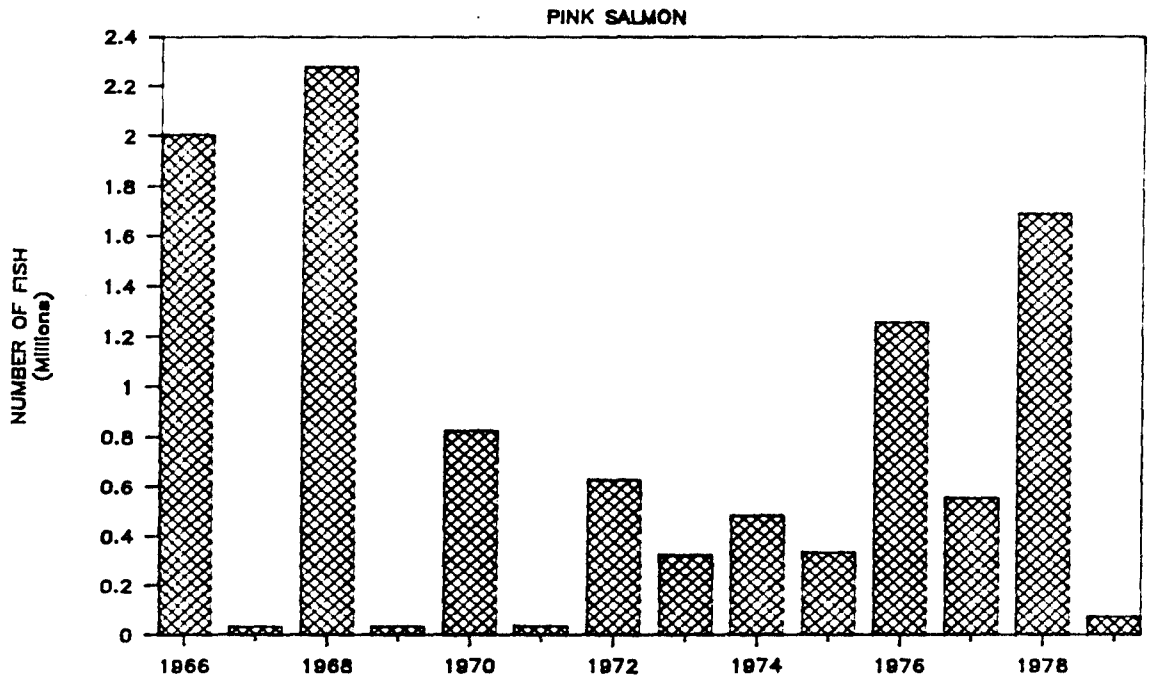


Figure 6. Pink salmon commercial catch, Upper Cook Inlet, 1966-1979.

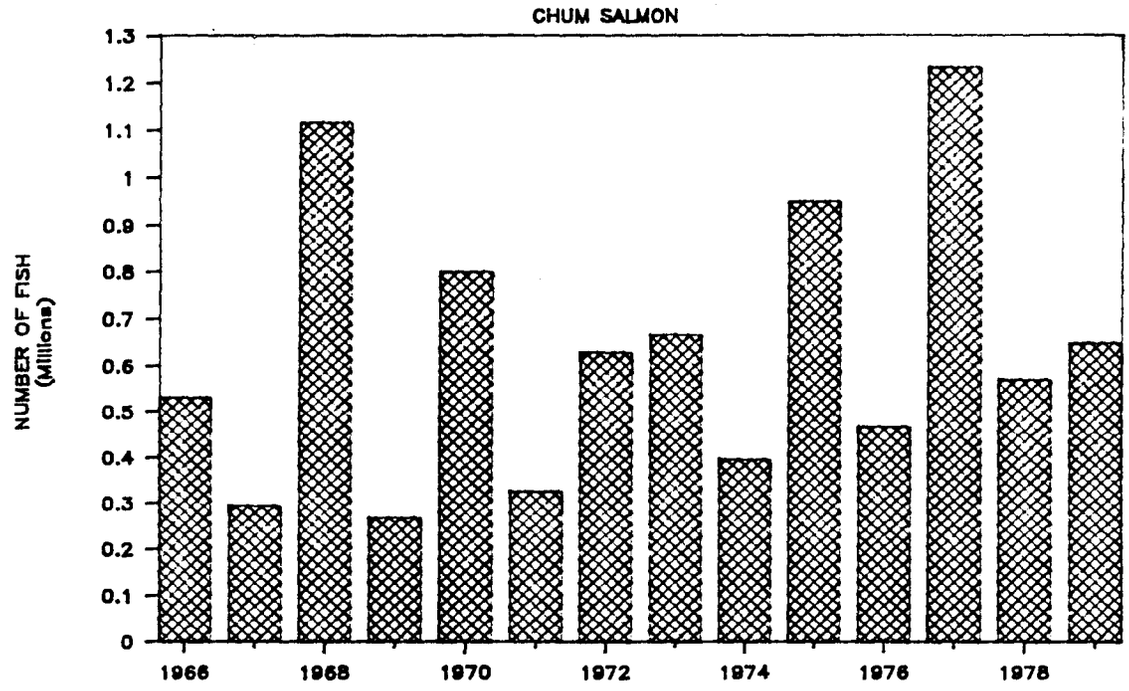


Figure 7. Chum salmon commercial catch, Upper Cook Inlet, 1966-1979.

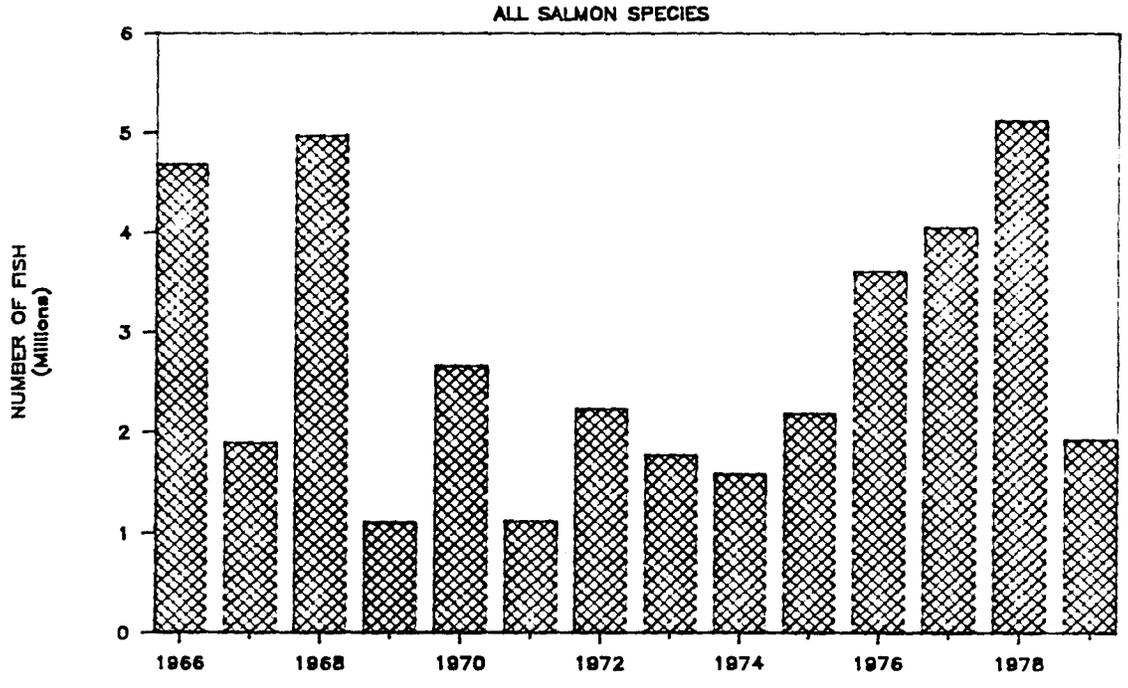


Figure 8. Commercial catch of all species of salmon, Upper Cook Inlet, 1966-1979.

Appendix Table 1. Upper Cook Inlet commercial chinook salmon harvest by gear type and area, 1966-1979.

	Central District Drift Gillnet		Central District Set Gillnet				Northern District Set Gillnet	
			Eastside		Kalgin/Westside			
Year	Number	%	Number	%	Number	%	Number	%
1966	392	5	7,329	86	401	4	422	5
1967	489	6	6,686	84	500	7	184	2
1968	182	4	3,304	73	579	13	471	10
1969	363	3	5,834	47	3,295	27	2,904	23
1970	367	4	5,366	64	1,165	14	1,460	17
1971	237	1	7,055	36	2,875	14	9,598	49
1972	375	1	8,600	53	2,199	14	4,912	31
1973	244	5	4,411	85	369	7	170	3
1974	422	6	5,570	85	425	6	169	3
1975	250	5	3,678	77	716	15	129	3
1976	692	6	8,249	76	1,469	13	457	5
1977	3,411	23	9,732	66	1,084	7	565	4
1978	2,072	12	12,468	72	2,093	12	669	4
1979	1,089	8	8,671	63	2,264	17	1,714	12

Data Source: Soldotna ADF&G computer files.

Appendix Table 2. Upper Cook Inlet commercial sockeye salmon harvest by gear type and area, 1966-1979.

	Central District Drift Gillnet		Central District Set Gillnet				Northern District Set Gillnet	
			Eastside		Kalgin/Westside			
Year	Number	%	Number	%	Number	%	Number	%
1966	1,103,261	60	485,330	26	132,443	7	131,080	7
1967	890,152	65	305,431	22	66,414	5	118,065	8
1968	561,737	51	317,535	29	85,049	7	140,575	13
1969	371,751	54	210,877	31	71,191	10	38,065	5
1970	474,718	64	142,701	19	62,724	9	66,458	9
1971	423,107	66	111,505	17	61,639	10	40,533	6
1972	505,935	57	204,617	23	83,422	10	85,737	10
1973	375,695	56	188,743	28	59,973	9	45,614	7
1974	265,751	53	136,889	27	52,957	11	41,563	8
1975	368,116	54	177,336	26	67,758	10	65,526	10
1976	1,055,767	63	476,376	28	62,338	4	69,649	5
1977	1,073,098	52	751,368	37	104,265	5	123,780	6
1978	1,803,358	69	660,918	25	105,767	4	51,624	2
1979	454,707	49	248,828	27	108,422	12	112,449	12

Data Source: Soldotna ADF&G computer files.

Appendix Table 3. Upper Cook Inlet commercial coho salmon harvest by gear type and area, 1966-1979.

	Central District Drift Gillnet		Central District Set Gillnet				Northern District Set Gillnet	
			Eastside		Kalgin/Westside			
Year	Number	%	Number	%	Number	%	Number	%
1966	80,901	28	68,877	24	59,509	20	80,550	28
1967	53,071	30	40,738	23	40,066	22	43,854	25
1968	167,383	36	80,828	17	63,301	14	156,648	33
1969	33,064	33	18,988	19	28,392	28	20,425	20
1970	114,392	41	30,318	10	52,363	19	82,722	30
1971	35,491	35	16,589	17	26,188	26	22,094	22
1972	21,578	27	24,673	30	15,319	19	19,346	24
1973	31,784	30	23,901	23	24,744	24	23,944	23
1974	75,640	38	36,837	19	40,610	20	47,038	23
1975	88,569	40	46,209	21	53,910	24	33,051	15
1976	80,731	39	47,873	23	42,224	20	37,850	18
1977	110,184	57	23,693	12	38,093	20	20,623	11
1978	76,252	35	34,141	16	61,711	28	47,256	21
1979	114,496	43	29,727	11	68,306	26	52,635	20

Data Source: Soldotna ADF&G computer files.

Appendix Table 4. Upper Cook Inlet commercial pink salmon harvest by gear type and area, 1966-1979.

Year	Central District Drift Gillnet		Central District Set Gillnet				Northern District Set Gillnet	
			Eastside		Kalgin/Westside			
	Number	%	Number	%	Number	%	Number	%
1966	593,654	30	969,624	48	70,507	4	371,960	18
1967	7,475	23	13,038	40	3,256	10	8,460	27
1968	880,512	39	785,887	35	75,755	3	534,839	23
1969	8,336	25	11,416	35	5,714	17	7,680	23
1970	346,485	42	281,067	34	24,763	3	174,193	21
1971	6,433	18	18,097	51	2,637	7	8,423	24
1972	115,096	18	403,706	64	18,936	3	90,830	15
1973	91,901	28	80,596	25	16,437	5	137,249	42
1974	140,734	29	291,408	60	9,014	2	42,879	9
1975	113,868	34	112,423	34	18,385	5	90,953	27
1976	599,600	48	479,009	38	30,044	2	148,090	12
1977	286,308	52	125,817	23	25,212	4	116,518	21
1978	934,178	55	372,865	22	54,785	3	327,270	20
1979	19,554	27	20,033	27	7,061	10	26,332	36

Data Source: Soldotna ADF&G computer files.

Appendix Table 5. Upper Cook Inlet commercial chum salmon harvest by gear type and area, 1966-1979.

Year	Central District Drift Gillnet		Central District Set Gillnet				Northern District Set Gillnet	
			Eastside		Kalgin/Westside			
	Number	%	Number	%	Number	%	Number	%
1966	424,972	80	7,461	1	64,725	12	35,598	7
1967	233,041	79	399	0	25,013	8	38,384	13
1968	1,022,900	91	1,563	0	44,986	4	58,454	5
1969	238,497	89	399	0	16,949	6	11,836	5
1970	705,467	90	1,228	0	48,783	6	24,507	3
1971	274,567	85	128	0	32,647	10	16,603	5
1972	564,253	90	1,727	0	40,567	7	19,780	3
1973	605,730	90	1,965	0	29,019	5	30,847	5
1974	344,594	87	506	0	15,346	4	36,492	9
1975	886,474	93	979	0	32,741	4	30,787	3
1976	405,773	86	1,484	0	47,877	11	14,050	3
1977	1,153,454	93	1,413	0	54,708	5	23,861	2
1978	489,065	86	4,617	1	40,946	7	37,331	6
1979	609,239	94	907	0	30,342	5	9,270	1

Data Source: Soldotna ADF&G computer files.

Appendix Table 6. Upper Cook Inlet commercial salmon harvest by gear type and area, 1966-1979.

Year	Central District Drift Gillnet		Central District Set Gillnet				Northern District Set Gillnet	
			Eastside		Kalgin/Westside			
	Number	%	Number	%	Number	%	Number	%
1966	2,203,180	47	1,538,621	33	327,585	7	619,610	13
1967	1,184,228	63	366,292	19	135,249	7	208,947	11
1968	2,612,714	53	1,189,117	24	269,670	5	890,987	18
1969	652,011	59	247,514	23	125,541	11	80,910	7
1970	1,641,429	62	460,680	18	189,798	7	349,340	13
1971	739,835	66	153,374	14	125,986	11	97,251	9
1972	1,207,217	54	643,323	29	160,443	7	220,605	10
1973	1,105,354	62	299,616	17	130,542	7	237,824	14
1974	827,141	52	471,210	30	118,352	7	168,141	11
1975	1,457,277	66	340,625	15	173,510	8	220,446	11
1976	2,142,563	59	1,012,991	28	183,952	5	270,096	8
1977	2,626,455	65	912,023	22	223,362	6	285,347	7
1978	3,304,925	65	1,085,009	21	265,302	5	464,150	9
1979	1,199,085	62	308,166	16	216,395	11	202,400	11

Data Source: Soldotna ADF&G computer files.

Appendix Table 7. Commercial catch of Upper Cook Inlet salmon in number of fish by species, 1966-79.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1966	8,544	1,852,114	289,837	2,005,745	532,756	4,688,996
1967	7,859	1,380,062	177,729	32,229	296,837	1,894,716
1968	4,536	1,104,904	469,850	2,278,197	1,119,114	4,976,601
1969	12,407	692,244	100,962	34,030	269,842	1,109,485
1970	8,358	746,634	279,989	826,639	800,829	2,662,449
1971	19,765	636,798	100,636	35,624	327,029	1,119,852
1972	16,086	879,724	80,933	628,576	630,016	2,235,335
1973	5,194	670,025	104,373	326,183	667,561	1,773,336
1974	6,586	497,160	200,125	484,035	396,938	1,584,844
1975	4,773	678,736	221,739	335,629	950,981	2,191,858
1976	10,867	1,664,131	208,710	1,256,743	469,806	3,610,257
1977	14,792	2,052,511	192,599	553,855	1,233,722	4,047,479
1978	17,302	2,621,667	219,360	1,689,098	571,959	5,119,386
1979	13,738	924,415	265,166	72,982	650,357	1,926,658
Ave.	10,772	1,171,509	208,001	754,254	636,982	2,781,518

Data Source: ADF&G Soldotna Field Office Computer Files

Appendix Table 8. Approximate exvessel value of the Upper Cook Inlet commercial salmon catch, 1960-1979.[1]

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	140	1,334	307	663	343	2,787
1961	100	1,687	118	16	204	2,125
1962	100	1,683	342	1,274	582	3,981
1963	89	1,388	193	13	236	1,919
1964	20	1,430	451	1,131	646	3,678
1965	50	2,099	109	70	230	2,558
1966	50	2,727	295	823	338	4,233
1967	49	2,135	187	13	202	2,586
1968	30	1,758	515	1,209	843	4,355
1969	70	1,231	109	23	204	1,637
1970	49	1,135	354	387	745	2,670
1971	189	1,102	143	22	316	1,772
1972	217	1,795	135	473	834	3,454
1973	122	3,214	320	363	2,134	6,153
1974	210	3,058	843	946	1,521	6,578
1975	65	2,596	821	423	2,753	6,658
1976	276	8,626	818	1,879	2,040	13,639
1977	525	13,274	933	772	5,991	21,495
1978	667	26,128	1,388	2,154	2,217	32,554
1979	625	8,094	1,658	89	4,201	14,667

[1] Expressed in thousands of dollars.
Data Source: 1960-1971 - Unpublished ADF&G files.
1972-1979 - Average weight x average price per pound x catch (all from CFEC and ADF&G computer files).

Appendix Table 9. Commercial herring catch, Upper Cook Inlet, 1973-1979.

Year	Harvest (Pounds)			
	Eastside	Chinitna Bay	Tuxedni Bay	Total
1973	27,704	0	0	27,704
1974	73,386	0	0	73,386
1975	12,483	0	0	12,483
1976	11,625	0	0	11,625
1977	34,618	0	0	34,618
1978	16,548	110,693	0	127,241
1979	134,625	192,350	49,679	376,654

Appendix Table 10. Commercial harvest of razor clams in Cook Inlet, 1919-1979.[1]

Year	Pounds	Year	Pounds
1919	76,963	1950	304,073
1920	11,952	1951	112,320
1921	72,000	1952	0
1922	510,432	1953	0
1923	470,280	1954	0
1924	156,768	1955	0
1925	0	1956	0
1926	0	1957	0
1927	25,248	1958	0
1928	0	1959	0
1929	0	1960	372,872
1930	0	1961	277,830
1931	No Record	1962	195,650
1932	93,840	1963	0
1933	No Record	1964	0
1934	No Record	1965	0
1935	No Record	1966	0
1936	No Record	1967	0
1937	8,328	1968	0
1938	No Record	1969	0
1939	No Record	1970	0
1940	No Record	1971	14,755
1941	0	1972	31,360
1942	0	1973	34,415
1943	0	1974	No Record
1944	0	1975	10,020
1945	15,000	1976	No Record
1946	11,424	1977	1,762
1947	11,976	1978	45,931
1948	2,160	1979	144,358
1949	9,672		

[1] Data for 1919-1968 from Nickerson (1975). Data for 1969-1983 from IBM fish ticket summaries (ADF&G, Division of Commercial Fisheries, Computer Services).

Appendix Table 11. Escapement goals and counts of sockeye salmon in selected streams of Upper Cook Inlet, 1968-1979.

Year	Kenai River		Kasilof River		Fish Creek	
	Escapement Goal	Escapement Estimate[1]	Escapement Goal	Escapement Estimate[1]	Escapement Goal	Escapement Estimate[2]
1968	0	88,000	0	93,000	0	19,616
1969	150,000	53,000	75,000	46,000	0	12,456
1970	150,000	73,000	75,000	37,000	0	25,000
1971	150,000	---	75,000	---	0	31,900
1972	150,000-250,000	318,000	75,000-150,000	112,000	0	6,981
1973	150,000-250,000	367,000	75,000-150,000	40,000	0	2,705
1974	150,000-250,000	161,000	75,000-150,000	64,000	0	16,225
1975	150,000-250,000	142,000	75,000-150,000	48,000	0	29,882
1976	150,000-250,000	380,000	75,000-150,000	140,000	0	14,032
1977	150,000-250,000	708,000	75,000-150,000	155,000	0	5,183
1978	350,000-500,000	399,000	75,000-150,000	117,000	0	3,555
1979	350,000-500,000	285,000	75,000-150,000	152,000	0	68,739

Year	Susitna River		Crescent River		Packers Creek	
	Escapement Goal	Escapement Estimate[1]	Escapement Goal	Escapement Estimate[1]	Escapement Goal	Escapement Estimate[2]
1978	200,000	94,000	0	N/C	0	N/C
1979	200,000	157,000	50,000	87,000	0	N/C

[1] Derived from sonar counters unless otherwise noted.
[2] Weir counts.

Appendix Table 12. Registered units of gillnet fishing effort by gear type in Cook Inlet, 1960-1979.

	Drift			Set			
Year	Resident	Non-Resident	Sub-total	Resident	Non-Resident	Sub-total	Total
1960	221	67	288	511	59	570	858
1961	279	93	372	564	22	586	958
1962	260	112	372	589	28	617	989
1963	333	139	472	626	34	660	1,132
1964	323	145	468	596	35	631	1,099
1965	329	145	474	556	34	590	1,064
1966	328	176	504	580	48	628	1,132
1967	350	186	536	554	50	604	1,140
1968	407	204	611	638	43	681	1,292
1969	497	208	687	686	42	728	1,415
1970	537	220	757	707	65	772	1,529
1971	519	191	710	693	38	731	1,441
1972	419	152	571	672	35	701	1,272
1973	516	146	662	632	43	775	1,437
1974	458	150	608	764	39	803	1,411
1975	291	162	453	613	44	657	1,110
1976	343	171	514	669	42	711	1,225
1977	360	179	539	690	41	731	1,270
1978	366	183	549	698	44	742	1,291
1979	372	182	554	700	44	744	1,298

Appendix Table 13. Subsistence salmon harvest, Upper Cook Inlet, 1971-1979.

District	King	Sockeye	Coho	Pink	Chum	Total	Permits Issued	Permits Returned
1971 Catch by Species								
Northern			10			10	9	8
Central			138			138	28	23
Total			148			148	37	31
1972 Catch by Species								
Northern		4	23	10	15	52	9	7
Central		--	32	17	--	49	21	19
Total		4	55	27	15	101	30	26
1973 Catch by Species								
Northern		24	104	3	37	168	19	17
Central		11	228	9	--	248	104	73
Total		35	332	12	37	416	123	90
1974 Catch by Species								
Northern	--	13	27	--	1	41	12	8
Central	1	1	264	17	1	284	97	73
Total	1	14	291	17	2	325	109	81
1975 Catch by Species								
Northern	--	--	68	--	14	82	17	12
Central	1	4	591	8	78	682	97	85
Total	1	4	659	8	92	764	114	97
1976 Catch by Species								
Northern		6	111	24	5	146	21	13
Central		15	456	89	8	568	90	67
Total		21	567	113	13	714	111	80
1977 Catch by Species								
Northern	--	2	17	--	12	31	10	9
Central	2	11	310	3	2	328	73	58
Total	2	13	327	3	14	359	83	67

- Continued -

Appendix Table 13, continued. Subsistence salmon harvest, Upper Cook Inlet, 1971-1979.

District	King	Sockeye	Coho	Pink	Chum	Total	Permits Issued	Permits Returned
1978 Catch by Species								
Northern	0	0	207	32	8	247	24	24
Central	5	42	3,322	96	23	3,488	297	238
Total	5	42	3,529	128	31	3,735	323	262
1979 Catch by Species								
Northern	143	5,023	3,014	301	123	8,604	1,040	660
Central	15	541	556	58	149	1,319	121	86
Total	158	5,564	3,570	359	272	9,923	1,161	746
Average	18.6	633	1,053	74.1	57.8	1,836.6	232	164

Appendix Table 14. Average price paid for commercially harvested salmon, Upper Cook Inlet, 1969-1979.[1]

Year	Chinook	Sockeye	Coho	Pink	Chum
1969	0.38	0.28	0.19	0.14	0.12
1970	0.40	0.28	0.25	0.14	0.14
1971	0.37	0.30	0.21	0.15	0.15
1972	0.47	0.34	0.27	0.19	0.20
1973	0.62	0.65	0.50	0.30	0.42
1974	0.88	0.91	0.66	0.46	0.53
1975	0.54	0.63	0.54	0.35	0.41
1976	0.92	0.76	0.61	0.37	0.54
1977	1.26	0.86	0.72	0.38	0.61
1978	1.16	1.32	0.99	0.34	0.51
1979	1.63	1.41	0.98	0.34	0.88

[1] Expressed as dollars paid per pound.
Data Source: 1969-1979 - Commercial Fisheries Entry Commission.

Appendix Table 15. Average weights of commercially harvested salmon, Upper Cook Inlet, 1972-1979.[1]

	Average Weight (lbs)				
Year	Chinook	Sockeye	Coho	Pink	Chum
1972	28.76	6.00	6.18	3.96	6.62
1973	37.85	7.38	6.13	3.71	7.61
1974	36.20	6.76	6.39	4.25	7.21
1975	25.14	6.07	6.86	3.60	7.06
1976	27.63	6.82	6.43	4.04	8.04
1977	28.19	7.52	6.73	3.67	7.96
1978	33.24	7.55	6.39	3.75	7.60
1979	27.93	6.21	6.38	3.58	7.34
Average	30.62	6.79	6.44	3.82	7.43

[1] Data Source: Final IBM stat runs of fish ticket data, ADF&G, Juneau. 1984 and 1985 data not available as of this writing.